

DRAFT

HERITAGE FIELDS

PROJECT 2012

GPA/ZC SECOND

SUPPLEMENTAL

ENVIRONMENTAL

IMPACT REPORT

SCH NO.

#2002101020



prepared by:

CITY OF IRVINE

*Contact:
Barry Curtis
Manager of Planning and
Development Services*

JULY 2012

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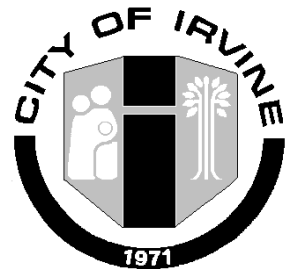
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CITY OF IRVINE

*P.O. Box 19575
Irvine, California 92623-9575
Tel: 949.724.7453 • Fax: 949.724.6440*

*Contact:
Barry Curtis
Manager of Planning and
Development Services*

JULY 2012

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List of Defined Terms and Abbreviations

UPDATED - DEFINED TERMS AND ABBREVIATIONS FOR THE 2012 SSEIR	
NAME OR ABBREVIATION	TERM OR DEFINITION
"2003 OCGP EIR"	The Final EIR for the initial OCGP Project certified by the City in May 2003
"2011 Approved Project"	The existing entitlements approved through 2011 (including the Western Sector Development Plan) and analyzed in the 2011 Certified EIR, which serve as the baseline for the SSEIR
"2011 SEIR Approved Project"	The project that was analyzed in the 2011 SEIR and approved by the City in September 2011. Note that the 2011 SEIR Approved Project includes all of the entitlements except the Western Sector Development Plan which was not approved until later in 2011 (and analyzed in Addendum No. 8 to the 2003 OCGP EIR).
"2011 SEIR"	The supplemental EIR certified by the City in 2011 that analyzed the environmental effects of the 2011 SEIR Approved Project, as compared to the project analyzed in the 2003 OCGP EIR and the seven subsequent Addenda.
"2011 Certified EIR"	The 2003 OCGP EIR, the 8 Addenda, and the 2011 SEIR. [Note this is not the same as the term "Certified EIR" used in the SEIR, which for obvious reasons could not have included the SEIR or the subsequently adopted Addendum No. 8.]
"2012 Modified Project"	Heritage Fields Project 2012 - General Plan Amendment and Zone Change; the proposed project as described in the NOP "Project Description" section
"AAQS"	Ambient Air Quality Standards; can be either federal (National AAQS, or NAAQS) or State (CAAQS)
"AB"	Assembly Bill
"ac"	Acre
"afy"	Acre foot per year (a water quantity measure)
"ACM"	Asbestos Containing Materials
"ACCM"	Asbestos containing construction materials
"ACOE"	Army Corps of Engineers
"Addendum/Addenda"	Each Addendum, or the eight addenda, to the 2003 OCGP EIR
"ADT"	Average Daily Traffic
"Applicant" or "Project Applicant"	Heritage Fields El Toro, LLC
"Approved Project Site"	The site of the 2011 Approved Project, including the entirety of "Existing PA 30" and "Existing PA 51" (see definitions below)
"Approved Wildlife Corridor Feature"	The 179 acres owned by the City in Existing PAs 51 and 30 that is currently zoned 1.4 Preservation and that is contemplated to serve as a wildlife corridor under the 2011 Approved Project.
"AQMP"	Air Quality Management Plan
"ARDA"	Amended and Restated Development Agreement entered into among the City, the Redevelopment Agency, and the Applicant and recorded December 2010
"BAU"	"Business As Usual," a phrase used by CARB in its <i>Climate Change Scoping Plan</i> to refer to the scenario without any action taken to reduce GHG emissions
"BMPs"	Best Management Practices
"BTUs"	British Thermal Units (a measure of heat)
"CAA"	Federal Clean Air Act (42 United States Code §§ 101 et seq.)
"CAAQS"	California Ambient Air Quality Standards
"CAFÉ Standards"	Federal Corporate Average Fuel Economy Standards, created by the 2007 Energy Bill, are new standards for increases in fleetwide fuel economy for passenger vehicles and light trucks
"Cal/EPA"	California Environmental Protection Agency

List of Defined Terms and Abbreviations

UPDATED - DEFINED TERMS AND ABBREVIATIONS FOR THE 2012 SSEIR	
NAME OR ABBREVIATION	TERM OR DEFINITION
"CalEEMod"	California Emission Estimator Model developed by the SCAQMD used to calculate construction and operational phase emissions of mass criteria pollutants and GHGs
"Caltrans"	California Department of Transportation
"CAPCOA"	California Air Pollution Control Officers Association
"CARB"	California Air Resources Board
"CAT"	California Climate Action Team
"CCAA"	California Clean Air Act of 1988, AB 2595 (Sher) (Chapter 1568, Statutes of 1988)
"CCR"	California Code of Regulations (includes the CEQA Guidelines)
"CDFG"	California Department of Fish and Game
"CEC"	California Energy Commission
"CEQA Guidelines"	Title 14, Cal. Code Regs. §§ 15000 et seq.
"CEQA"	California Environmental Quality Act (Pub. Res. Code §§ 21000 et seq.)
"CERCLA"	Comprehensive Environmental Response, Compensation, and Liability Act
"CFC"	Chlorofluorocarbons, a category of greenhouse gases
"CH ₄ "	Methane, a greenhouse gas
"City"	The City of Irvine, an administrative body
"City Parcels"	City-owned land located adjacent to and northeast of the Southern California Regional Rail Authority tracks and to the southwest of the future alignment of Marine Way; plus City-owned land located adjacent to and southeast of the Southern California Regional Rail Authority tracks and to the west of the future alignment of Marine Way; plus City-owned land located on Alton Parkway between Technology Drive and Barranca Parkway. Collectively, these parcels total approximately 35 acres.
"CMP"	Congestion Management Plan
"CNEL"	Community Equivalent Noise Level
"CNRA"	California Natural Resources Agency
"CO"	Carbon Monoxide (federal and State criteria air pollutant)
"CO ₂ e"	Carbon dioxide-equivalent greenhouse gas emissions
"Combined PA 51"	New PA 51 after approval of the 2012 Modified Project, resulting from combining Existing PA 30 and Existing PA 51
"CPUC"	California Public Utilities Commission
"DAMP"	Drainage Area Master Plan, issued by the Orange County Stormwater Program (last in July 2003' see SEIR, p. 5.5-10)
"DB"	Density Bonus
"dB"	Decibel
"dBA"	A-Weighted Decibel
"District"	Heritage Fields Development District
"DOD"	Department of Defense
"DON"	The Department of the Navy
"DSSEIR"	Draft Second Supplemental Environmental Impact Report
"DTSC"	California Department of Toxic Substances
"du"	Dwelling unit
"EDB"	Extended Detention Basin
"Existing PA 30"	PA 30 as currently configured
"Existing PA 51"	PA 51 as currently configured

List of Defined Terms and Abbreviations

UPDATED - DEFINED TERMS AND ABBREVIATIONS FOR THE 2012 SSEIR	
NAME OR ABBREVIATION	TERM OR DEFINITION
"Existing Plans, Programs, and Policies ("PPPs")"	Measures, including existing regulatory requirements or plans and programs that are applicable to the 2012 Modified Project, and that are assumed in any impacts analysis as helping to reduce the level of any impact of the 2012 Modified Project prior to the implementation of any needed mitigation
"FAA"	Federal Aviation Administration
"FHWA"	Federal Highway Administration
Final SSEIR	Final Second Supplemental Environmental Impact Report
"FMMP"	Farmland Mapping and Monitoring Program
"FOSET"	Finding of Suitability for Early Transfer
"FOSL"	Finding of Suitability for Lease
"FOST"	Finding of Suitability for Transfer
"FSSEIR"	Final Second Supplemental Environmental Impact Report
"FTA"	Federal Transit Administration
"GHG"	Greenhouse gas
"GMP"	Groundwater Management Plan
"GPA"	General Plan Amendment
"GPA/ZC"	General Plan Amendment/Zone Change
"GPC"	The Orange County Great Park Corporation, the entity that manages and operates the Great Park. (Despite the name, it is a division of the City).
"gpm"	Gallons per minute
"Great Park Board"	The Orange County Great Park Board; the entity that governs the GPC
"Great Park"	The Orange County Great Park; the property owned by the City within Existing PAs 30 and 51
"GWh"	Gigawatt-hours
"GWP"	Global Warming Potential
"H ₂ S"	Hydrogen Sulfide
"HAP"	Hazardous Air Pollutant, an air pollutant listed as causing or contributing to mortality or serious illness in Section 112(b) of the federal Clean Air Act (42 United States Code § 7412(b)), which is also a Toxic Air Contaminant in California (SEIR, p. 5.2-4)
"HCFC"	Hydrochlorofluorocarbons, a category of greenhouse gases
"HCM"	Highway Capacity Manual
"HCP"	Habitat Conservation Plan
"Heritage Fields Development"	The property located in Existing PA 30 and Existing PA 51 owned by Applicant, together with the TCA Parcel
"HFC"	Hydrofluorocarbons, a category of greenhouse gases
"HMMP"	Habitat Mitigation and Monitoring Plan
"HWMU"	Hazardous Waste Management Unit
"I-5"	Interstate 5
"ICU"	Intersection Capacity Utilization
"IPCC"	Intergovernmental Panel on Climate Change
"IPD"	Irvine Police Department
"IRP"	Installation Restoration Program
"Irvine CEQA Guidelines" (if adopted)	Local CEQA Guidelines adopted by the City (if adopted)
"Irvine"	The city as a geographic location, as opposed to the "City," a governmental agency
"IRWD"	Irvine Ranch Water District
"ISC3ST"	Industrial Source Complex 3 Short Term model, a localized air dispersion model developed by the USEPA
"ITAM"	Irvine Transportation Analysis Model
"ITEMS"	Irvine Traffic Engineering System

List of Defined Terms and Abbreviations

UPDATED - DEFINED TERMS AND ABBREVIATIONS FOR THE 2012 SSEIR	
NAME OR ABBREVIATION	TERM OR DEFINITION
"IUSD"	Irvine Unified School District
"IWRP"	Integrated Water Resources Plan
"kV"	Kilovolt
"kWh"	Kilowatt-hours
"LAX"	Los Angeles International Airport
"LBP"	Lead Based Paint
"lbs"	Pounds
"LCFS"	Low-Carbon Fuel Standard
"LESA"	Land Evaluation and Site Assessment Model
"LFTAM"	Lake Forest Traffic Analysis Model
"LIFOC"	Lease in Furtherance of Conveyance
"LLD"	Lifelong Learning District, the former designation (until 2009) for Districts 1, 4 and 8
"LOMR"	Letter of Map Revision
"LOS"	Level of Service
"LST"	Localized Significance Threshold
"LUE"	Land Use Element
"LUST"	Leaking Underground Storage Tank
"MAHP"	Master Affordable Housing Plan
"MCAS"	The Marine Corps Air Station (El Toro)
"MEP"	Maximum Extent Practicable
"mgd"	Million gallons per day
"Mitigation Measures ("MMs")"	A measure recommended in accordance with CEQA to reduce or avoid an environmental impact that is identified as significant.
"MMTons"	Million Metric Tons
"MPAH"	Orange County Master Plan of Arterial Highways
"MPO"	Metropolitan Planning Organization (in our case SCAG)
"MRZ"	Mineral Resource Zone
"MS4"	Municipal Separate Storm Sewer System
"MTons"	Metric Tons
"MWD"	Metropolitan Water District of Southern California
"MWDOC"	Municipal Water District of Orange County
"N ₂ O"	Nitrous Oxide, a greenhouse gas
"NAAQS"	Federal National Ambient Air Quality Standards
"NAT"	No Action Taken, a phrase used by CARB in its <i>Climate Change Scoping Plan</i> to refer to the scenario without any action taken to reduce GHG emissions
"NCCP/HCP"	Natural Communities Conservation Plan/Habitat Conservation Plan
"NEPA"	National Environmental Policy Act
"NITM"	North Irvine Transportation Mitigation Program
"NO"	Nitric Oxide
"NO ₂ "	Nitrogen Dioxide, a secondary air pollutant
"Notice of Availability/Notice of Completion ("NOA/NOC")"	A notice that the Draft SSEIR is completed and available for public review and comment
"Notice of Preparation ("NOP")"	A notice under CEQA that the lead agency has decided to prepare an EIR or SEIR and is soliciting comments from responsible and other agencies
"NO _x "	Nitrogen Oxides (federal and State criteria air pollutant), an Ozone precursor
"NPDES"	National Pollution Discharge Elimination System
"NTS"	Natural Treatment System
"O ₂ "	Oxygen
"O ₃ "	Ozone, a secondary air pollutant
"OCCOG"	Orange County Council of Governments

List of Defined Terms and Abbreviations

UPDATED - DEFINED TERMS AND ABBREVIATIONS FOR THE 2012 SSEIR	
NAME OR ABBREVIATION	TERM OR DEFINITION
"OCFA"	Orange County Fire Authority
"OCFCD"	Orange County Flood Control District
"OCGP Master Plan"	The Orange County Great Park Master Plan, first adopted in 2007 via Addendum 4, and revised in 2011 via Addendum 8
"OCGPRP"	The Orange County Great Park Redevelopment Plan, approved by the City on May 18, 2006
"OCHCA"	Orange County Health Care Agency
"OCP"	Orange County Projections (demographics)
"OCPL"	Orange County Public Library
"OCTA"	Orange County Transportation Authority
"OCWD"	Orange County Water District
"OCWR"	Orange County Waste & Recycling, a governmental agency that operates and regulates the local Orange County landfills
"OWS"	Oil-water separators
"PA"	Planning Area, a land designation for areas within Irvine
"Pb"	Lead (federal and State criteria air pollutant)
"PCB"	Polychlorinated Biphenyls
"PFCs"	Perfluorocarbons, a category of greenhouse gases
"PM ₁₀ "	Coarse Inhalable Particulate Matter (federal and State criteria air pollutant)
"PM _{2.5} "	Fine Inhalable Particulate Matter (federal and State criteria air pollutant)
"POTW"	Publicly Owned Treatment Works
"ppb"	Parts per billion, a measure of air pollutants
"ppm"	Parts per million, a measure of air pollutants
"Project Design Feature ("PDF")"	Features or components of the 2012 Modified Project that are specifically intended and designed to reduce or avoid one or more significant environmental impact
"Proposed Project Site"	The site of the 2012 Modified Project, including the "Heritage Fields Development" (as defined above), together with the "City Parcels" (defined above), the "Relocated Wildlife Corridor Feature" (defined below) and the portion of the Great Park known as the "Sports Park District" (defined below)
"R&D"	Research and Development, a land use category. Sometimes referred to as Research and Development/ Medical Science
"RCNM"	Federal Highway Association's Roadway Construction Noise Model
"RCP"	Regional Comprehensive Plan, a major advisory plan prepared by SCAG that addresses important regional issues such as housing, traffic/transportation, water and air quality
"RCRA"	Resource Conservation and Recovery Act
"Redevelopment Agency"	The former Redevelopment Agency of the City
"Relocated Wildlife Corridor Feature"	The 132-acre portion of the Approved Wildlife Corridor Feature between Irvine Boulevard and Southern California Regional Rail Authority rail that is proposed to be relocated under the 2012 Modified Project to the eastern portion of the Proposed Project Site, adjacent to Borrego Canyon Channel within Districts 5 and 6, as shown in Figure 3-5 of this DSSEIR
"RHNA"	Regional Housing Needs Assessment
"ROD"	Record of Decision
"RPS"	Renewable Portfolio Standard
"RTP"	Regional Transportation Plan, a regional transportation investment framework prepared by SCAG to address the region's transportation and related challenges
"RUWMP"	Regional Urban Water Management Plan
"RWQCB"	Regional Water Quality Control Board

List of Defined Terms and Abbreviations

UPDATED - DEFINED TERMS AND ABBREVIATIONS FOR THE 2012 SSEIR	
NAME OR ABBREVIATION	TERM OR DEFINITION
"SAMP"	Sub-Area Master Plan
"SARWQCB"	California Regional Water Quality Control Board, Region 8, Santa Ana
"SB"	"Senate Bill"
"SCAG"	Southern California Association of Governments
"SCAQMD"	South Coast Air Quality Management District
"SCE"	Southern California Edison
"SCGC"	Southern California Gas Company
"SCREC"	UCI South Coast Research and Extension Center
"SCRRA"	Southern California Regional Rail Authority
"SCS"	Sustainable Communities Strategy, an advisory land use plan to be adopted by MPOs pursuant to SB 375 as part of their next RTP
"SF ₆ "	Sulfur Hexafluoride
"SIP"	California State Implementation Plan (air quality)
"SO ₂ "	Sulfur Dioxide (federal and State criteria air pollutant)
"SoCAB"	Southern California Air Basin
"SO _x "	Sulfur Oxides
"SP"	Service Population, a population measure (including residents, employees and, in the SEIR, adult students) used to determine the efficiency metric used as a GHG significance threshold under the SCAQMD's draft methodology
"Sports Park District"	The portion of the Great Park approved to be developed with sports fields, courts and stadiums and other sports-related attractions, as described in the OCGP Master Plan (and Addendum No. 4) and the Western Sector Park Development Plan (Addendum No. 8).
"sq. ft."	Square feet
"SR-133"	State Route 133
"SR-241"	State Route 241
"SRA"	Seismic Response Area
"SUSMP"	Standard Urban Water Management Plan
"SVUSD"	Saddleback Valley Unified School District
"SWP"	State Water Project
"SWPPP"	Storm Water Pollution Prevention Plan
"SWRCB"	State Water Resources Control Board
"TAC"	Toxic Air Contaminant (as defined in the California Health and Safety Code, including HAPs)
"TAZs"	Traffic Analysis Zones
"TCA Parcel"	11 acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard
"TCE"	Trichloroethylene
"TIC"	The Irvine Company
"TMDL"	Total Maximum Daily Load
"TOD"	Transit Oriented District
"TPM"	Tentative Parcel Map
"TTM"	Tentative Tract Map
"TTOD"	Trails and Transit Oriented Development
"USDOE"	United States Department of Energy
"USEPA"	United States Environmental Protection Agency
"USFWS"	United States Fish and Wildlife Service
"UST"	Underground Storage Tank
"UWMP"	Urban Water Management Plan
"V/C"	Volume to Capacity
"VMT"	Vehicle miles traveled

List of Defined Terms and Abbreviations

UPDATED - DEFINED TERMS AND ABBREVIATIONS FOR THE 2012 SSEIR	
NAME OR ABBREVIATION	TERM OR DEFINITION
"VOC"	Volatile Organic Compound (federal and State criteria air pollutant), an ozone precursor
"VTPM"	Vesting Tentative Parcel Map
"VTTM"	Vesting Tentative Tract Map
"WQMP"	Water Quality Management Plan
"WRMP"	Water Resources Management Plan
"WSA"	Water Supply Assessment (per SB610)
"ZC"	Zone Change
"Zoning Ordinance"	City of Irvine Zoning Ordinance

List of Defined Terms and Abbreviations

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12. Qualifications of Persons Preparing the SSEIR

The following individuals were involved in the preparation of this SSEIR and/or technical reports in support of the SSEIR. The nature of their involvement and background and qualifications are summarized below.

12.1 AECOM

Reviewing and Assisting in the Preparation of the SSEIR

John Bridges, FAICP
Principal

- Master of City Planning, San Diego State University.
- B.A., Political Science, University of Texas, Arlington.
- 33 years of urban and environmental planning experience.

Alia Hokuki, AICP
Project Manager

- Master of Urban and Regional Planning, University of California, Irvine.
- B.A., Development Studies, University of California, Los Angeles.
- 16 years of urban and environmental planning experience.

Cheryl Laskowski, Ph.D.
Air Quality and GHG Expert

- Ph.D., Ecology, University of California, Davis.
- M.A., Energy and Environmental Analysis, Boston University.
- B.S., Natural Resource Ecology & Management, University of Michigan, Ann Arbor.

Jayna Morgan
Environmental Planner

- B.A., Social Ecology, Environmental Analysis and Planning, University of California, Irvine.
- Over 25 years of environmental planning experience.

Fareeha Kibriya, AICP, LEED AP
Environmental Planner

- Master of Urban and Regional Planning, University of California, Irvine.
- B.A., Social Ecology, University of California, Irvine.
- 6 years of environmental planning experience.

12. Qualifications of Persons Preparing EIR

Jane Chang, LEEP AP
Environmental Planner

- Master of Urban and Regional Planning, University of California, Irvine.
- B.A., Social Ecology, University of California, Irvine.
- 12 years of environmental planning experience.

12.2 THE PLANNING CENTER/DC&E

Preparation of Data and SSEIR Analysis

William Halligan, Esq.
Principal, Environmental Services

- BA, Social Ecology, University of California, Irvine.
- JD, Chapman University School of Law.
- Member of the State Bar of California.
- 24 years of experience preparing and managing EIRs.

Nicole Vermilion
Senior Planner

- BA Environmental Studies and BS Ecology and Evolutionary Biology, University of California, Santa Cruz.
- MURP, University of California, Irvine.
- 7 years of experience preparing and managing EIRs.

Jorge Estrada
Associate Planner

- BS, Urban and Regional Planning, California Polytechnic State University, Pomona, 2000.
- 12 years of planning and environmental experience.

Michelle Halligan
Associate Planner

- BS, City and Regional Planning, California Polytechnic State University, San Luis Obispo, 2005.

Michael Milroy
Associate Planner

- BS, Biology, California State University, Long Beach, 1999.
- MS, Interdisciplinary Studies/Neuroscience, California State University, Long Beach, 2004.
- 6 years of experience preparing EIRs.

Ryan Potter
Assistant Planner

- BS, City and Regional Planning, California Polytechnic State University, San Luis Obispo, 2006.
- MURP, University of California, Irvine, 2011.

12. Qualifications of Persons Preparing EIR

12.3 ENGEO

Soils and Geology and Water Quality

Julia Moriarty, GE
Principal

- BS, Civil Engineering, California State University, Chico.

Jonathan Boland, GE
Senior Engineer

- BS, Civil Engineering, Cal Poly San Luis Obispo.
- MS, Civil Engineering, UC Davis.

Philip J. Stuecheli CEG
Associate Geologist

- BS, Geology, Ohio State University.
- MS, Geology, Ohio State University.

Jonathan D. Buck
Senior Engineer

- BS, Civil Engineering, Arizona State University.
- MS, Civil Engineering, Arizona State University.
- California Registered Geologist and California Registered Environmental Assessor II.
- 26 years experience in environmental geology.

12.4 ENVIRON

Air Quality and Greenhouse Gas Emissions Analyses

Shari Libicki, Ph.D.
Principal

- BSE, Chemical Engineering, University of Michigan, 1979.
- MS, Chemical Engineering, Stanford University, 1981.
- Ph.D., Chemical Engineering, Stanford University, 1985.
- 31 years of engineering and air quality modeling experience.

Eric Lu, MS, PE, CPP
Senior Manager

- MSChE from the University of California, Berkeley.
- BSChE from Brown University.
- 10 years experience in air quality analysis.

12. Qualifications of Persons Preparing EIR

12.5 RBF CONSULTING

Hydrology

John Leonard, P.E.

Vice President - Land Development

- BS, Civil Engineering, Cal Poly Pomona.
- 19 years of civil engineering experience.

12.6 URBAN CROSSROADS

Traffic and Noise Analyses

John Kain, AICP

President

- MS – Administration (emphasis in Transportation Systems Management), UCI, 1977
- BA – Social Ecology (emphasis in Urban Planning), UCI, 1975
- 36 years of full time professional experience
- Fellow - Institute of Transportation Engineers

Bill Lawson, P.E., AICP, PTP, INCE

Principal

- BS, City and Regional Planning, Cal Poly San Luis Obispo
- MS, Civil and Environmental Engineering, Cal Poly San Luis Obispo
- 17 Years of Professional Experience.

Marlie Whiteman, P.E.

Director of Modeling/Senior Associate

- B. S. C. E. (Bachelor of Science, Civil Engineering), University of California, Irvine, 1996
- 16 years of professional transportation planning.

12.7 WESTON SOLUTIONS, INC.

Hazards and Hazardous Materials

Cris Jespersen, P.E.

Vice President

- B.S. Chemical Engineering
- 29 years of experience.

Tracy Walker, P.G.

Sr. Project Manager

- M.S. Geology
- 21 years of experience

Linda R. Balcom, P.G

Senior Program Manager

- B.S. Geology
- 22 years of experience

12. Qualifications of Persons Preparing EIR

Tana Jones

Senior Project Manager

- B.S. Natural Resource Management
- 14 years of experience

Nichole DeRose

Civil Engineer

- B.S. Civil Engineering
- 5 years of experience

12. Qualifications of Persons Preparing EIR

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11. Organizations and Persons Consulted

11.1 CITY OF IRVINE (LEAD AGENCY)

Community Development Department

- Eric Tolles Director of Community Development
- Tim Gehrich, AICP Deputy Director of Community Development
- Barry Curtis Manager of Planning and Development Services
- Diane Vu Senior Planner
- Hernan DeSantos Senior Planner
- Mark Asturias Housing Manager
- Kerwin Lau Project Development Administrator
- Peter Anderson Senior Transportation Analyst
- Michael Yang Senior Water Quality Engineer
- Tom Polson Engineering Geologist

Public Works Department

- Manuel Gomez Director of Public Works
- Shohreh Dupuis Manager of Transit and Transportation
- Lisa Thai Senior Transportation Analyst
- Mark Carroll City Engineer
- Thomas Perez Senior Civil Engineer

Community Services Department/Parks and Recreation

- Brian Fisk, AICP Director of Community Services
- Stacy Blackwood Community Services Manager
- Steve Haubert Principal Planner

Rutan and Tucker LLP (City Attorney's Office)

- Philip Kohn City Attorney
- Jeff Melching Assistant City Attorney
- Michelle Molko Attorney

Irvine Public Safety Department

- John Hare Police Lieutenant
- Bruce Ramm Consultant to IPSD (Security Design Concepts)

11. Organizations and Persons Consulted

11.2 OTHER PERSONS CONSULTED

Heritage Fields El Toro, LLC (Project Applicant)

- Lynn Jochim Executive Vice President
- Jennifer Bohlen, P.E. Vice President, Engineering
- James Werkmeister, P.E. Director of Land Development

Gilchrist & Rutter PC (Legal Counsel to the Applicant)

- Robert I. McMurry Partner
- A. Catherine Norian Partner
- Elisa L. Paster Associate

Great Park Corporation

- Michael D. Ellzey Chief Executive Officer
- Cliff Wallace Deputy Chief Executive Officer

Caltrans

- Christopher Herre Branch Chief

11.3 SERVICE PROVIDERS

OC Waste & Recycling

- John Arnau Administrative Manager II

Irvine Unified School District

- Lorrie Ruiz Assistant Director of Facilities

OC Public Libraries

- Andrea Cowell Financial Budget Analyst

Saddleback Unified School District

- Noemi Avila-Zamudio Coordinator, Planner/Facilities

The Southern California Gas Company

- Jeannette Garcia Technical Services Supervisor, Pacific Coast Region

Irvine Ranch Water District

- Mike Hoolihan District Manager, Planning and Resources
- Kellie Welch Water Resources Manager

11. Organizations and Persons Consulted

AT&T

- Craig Akin Design Engineer

Southern California Edison

- Matt Wazewski Customer Service Planner

Cox Communications-California

- Art Yoon Director, Public Affairs

Orange County Fire Authority

- Michele Hernandez Management Analyst, Strategic Services

11. Organizations and Persons Consulted

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10. Growth-Inducing Impacts of the Modified Project

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this chapter is provided to examine ways in which the 2012 Modified Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also required is an assessment of other projects that would foster other activities that could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through the analysis of the following questions:

- Would the 2012 Modified Project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the vicinity of the Proposed Project Site, or through changes in existing regulations pertaining to land development?
- Would the 2012 Modified Project result in the need to expand one or more public services to maintain desired levels of service?
- Would the 2012 Modified Project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of the 2012 Modified Project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This analysis is presented to provide additional information on ways in which the 2012 Modified Project could contribute to significant changes in the environment, beyond the direct consequences of developing the land in the manner examined in the preceding chapters of this DSSEIR. The Proposed Project Site is surrounded by urban residential developments to the west and north, general industrial/research and development uses as well the Irvine Spectrum to the south, and the city of Lake Forest to the east. Other nearby local jurisdictions include the cities of Costa Mesa, Laguna Hills, Laguna Niguel, Laguna Woods, Newport Beach, Santa Ana, Tustin, and the County of Orange. The areas adjacent to the Proposed Project Site are planned for significant growth.

Would the 2012 Modified Project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the vicinity of the Proposed Project Site, or through changes in existing regulations pertaining to land development?

As discussed in Chapter 3, *Project Description*, of this DSSEIR, the 2012 Modified Project consists of a General Plan Amendment and Zone Change in connection with Heritage Fields' request to revise the 2011 Approved Project to (1) add 4,606 (5,806 with the optional conversion of non-residential to residential uses) residential units to Combined PA 51 (a new planning area designation proposed to encompass Existing PAs 30 and 51) in addition to the 4,894 units already approved to be developed in Existing Planning Area 51, and (2) reduce non-residential uses on the Proposed Project site by 1.68 million square feet, for a revised total of 4,902,200 square feet (or 4,367,200 with the optional conversion) of non-residential uses.

10. Growth-Inducing Impacts of the Proposed Project

Although the 2011 Certified EIR analyzed fewer residential units and a greater amount of non-residential uses, the overall scale and scope of the 2012 Modified Project are consistent with that of the 2011 Approved Project. The 2012 Modified Project's development footprint is equal to that analyzed in the 2011 Certified EIR and the Proposed Project Site is already planned for development by the General Plan. As discussed in Section 5.13, *Utilities and Service Systems*, of this DSSEIR, infrastructure improvements and new construction would be required in order to develop the 2012 Modified Project. However, extensions of existing utility facilities from surrounding areas as described in more detail in Section 5.13, *Utilities and Service Systems*, would provide a sufficient tie-in to accommodate the demands of the 2012 Modified Project at full buildout. In addition, the infrastructure described in Section 5.13, *Utilities and Service Systems* would only be constructed as necessary to serve the 2012 Modified Project itself, not development elsewhere. Although roadways would be constructed on-site to serve project development, access to the Proposed Project Site is already provided by existing roadways including Sand Canyon Avenue, Trabuco Road, Irvine Avenue and Marine Way. Finally, the changes to zoning text included in the 2012 Modified Project would result in modifications that are unique to the 2012 Modified Project, and would not influence the intensity, density, or configuration of development outside the Proposed Project Site. Therefore, the 2012 Modified Project's proposed amendments to various planning documents would not remove existing obstacles to growth.

Would the 2012 Modified Project result in the need to expand one or more public services to maintain desired levels of service?

As discussed in Section 5.10, *Public Services*, of this DSSEIR, the 2012 Modified Project would require additional public services to maintain the City's desired level of service standards. The 2012 Modified Project is expected to increase demand for fire protection services, police services, school services, and library services, which would contribute to the need to expand facilities and staff that could also serve surrounding areas. However, expansions of these services were already discussed in the 2011 Certified EIR and the additional changes necessitated by the 2012 Modified Project would not create any new significant impacts in this regard. Further, under the 2011 Approved Project and the 2012 Modified Project, the existing City and, where applicable, County, plans, programs, and policies concerning fire, police, school, and library services must be implemented (see Section 5.10, *Public Services*), and that implementation would ensure that the public services capability will grow proportionate to the increase in demand. In addition, development of the Proposed Project Site, with the exception of the 11-acre TCA Parcel, was already contemplated as part of the 2011 Approved Project. Although the 2012 Modified Project would require additional public services to maintain current levels of service, these increases generally would not expand service to areas which are not currently planned for development and therefore, would not facilitate future growth around the Proposed Project Site. The area surrounding the Proposed Project Site is already mostly developed and public services are already readily available. As a result, the 2012 Modified Project would not have significant growth-inducing consequences with respect to public services substantially greater than the 2011 Approved Project.

Would the 2012 Modified Project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

As with the 2011 Approved Project, and as set forth in Section 5.9, *Population and Housing*, of this DSSEIR, during construction of the 2012 Modified Project, a substantial number of design, engineering, and construction-related jobs would be created on a short term, temporary basis. The number of construction employees would vary during each phase of construction. It is anticipated that persons filling the construction-related jobs would be pre-existing residents of Irvine and the surrounding area, and that

10. Growth-Inducing Impacts of the Proposed Project

people would not relocate to the area for those temporary jobs. As a result, these persons would not require new housing and would continue to be served by their existing community-serving shopping, dining, and entertainment services. Construction of the 2011 Approved Project is expected to generate a maximum of 763 construction jobs during the peak construction period, as identified in the 2011 SEIR. As discussed in Section 5.3, *Air Quality*, peak construction activities would remain the same, so no additional construction jobs are anticipated as compared to the 2011 Approved Project. The persons filling short-term construction jobs resulting from the 2012 Modified Project would not require different services than those analyzed for the 2011 Approved Project such that they would create a demand for economic goods and services that would significantly affect the environment. If additional short-term construction-related jobs are created, they would last only until construction of the 2012 Modified Project is complete. Any additional short-term construction jobs would be a direct, growth-inducing effect of the 2012 Modified Project, but this effect would not be significantly different or greater than the effect created by the 2011 Approved Project because, under both scenarios persons filling the short-term construction-related jobs would continue to be served by the existing community.

Like the 2011 Approved Project, development of the 2012 Modified Project would transform a currently underutilized and blighted area of Irvine into a vibrant mixed-use development. As new dwelling units are developed and occupied, residents of the 2012 Modified Project would seek shopping, entertainment, employment, home improvement, auto maintenance, and other economic opportunities on the Proposed Project Site and in the surrounding area, which is already rich with such opportunities. While this increased demand for economic goods and services would encourage the creation of new businesses, and/or the expansion of existing businesses to address those needs, the mixed-use nature of the development proposed on the Proposed Project Site, and as already contemplated by the General Plan, would also satisfy some of the demand for goods and services and would enhance the economic vitality of the area. The 2012 Modified Project's placement of future housing units in close proximity to office, commercial, industrial, and institutional uses envisioned on or near the Proposed Project Site, like the 2011 Approved Project, would reduce potential growth inducing impacts by ensuring that many of the necessary services could be found within the Proposed Project Site or in close proximity to it.

Moreover, non-residential uses are reduced in the 2012 Modified Project as compared to the 2011 Approved Project. While the 2011 Certified EIR estimated that approximately 16,510 long-term jobs would be generated by the 2011 Approved Project, the 2012 Modified Project would generate approximately 15,050 jobs, as discussed in Section 5.9, *Population and Housing*, of this DSSEIR. The reduced square footage of non-residential land uses and reduced employment generation, together with the increase in residential units proposed by the 2012 Modified Project, would create a superior jobs-housing balance as compared to the 2011 Approved Project, since Irvine is currently "jobs-rich".

Overall, while the 2012 Modified Project does propose additional residential development, it would not result in growth significantly greater than that contemplated for the 2011 Approved Project because the additional residential uses will be offset by a reduction in the amount of non-residential uses. The additional housing units and reduced employment-generating uses that would be built upon implementation of the 2012 Modified Project would not indirectly encourage substantial new growth in Irvine that was not previously projected in the General Plan and analyzed in the 2011 Certified EIR. Therefore, as is true for the 2011 Approved Project, indirect growth-inducing effects would be minimized due to the balance of land uses proposed by the 2012 Modified Project.

10. Growth-Inducing Impacts of the Proposed Project

Would approval of the 2012 Modified Project involve some precedent setting action that could encourage and facilitate other activities that could significantly affect the environment?

The 2012 Modified Project involves amendments to the City of Irvine General Plan and Zoning Ordinance, but those amendments are specific to the Proposed Project Site itself. The 2012 Modified Project does not propose changes to any of the City's building safety standards (i.e., building, grading, plumbing, mechanical, electrical, or fire codes). Measures have been identified in Sections 5.1 through 5.13 of this DSSEIR to ensure that future site-specific development complies with all applicable City plans, policies, ordinances, etc., so that there will be no conflicts with adopted land development regulations, and mitigation measures have been recommended to ensure that any significant environmental impacts will be reduced to less than significant levels, where feasible.

Pressures to develop other land in the surrounding area may derive from regional economic conditions and market demands for housing, commercial, office, and industrial land uses that may be directly or indirectly influenced by the 2012 Modified Project. However, the amount and intensity of development proposed by the 2012 Modified Project, which includes 4,606 (or 5,806 with the optional conversion) more residential units and approximately 1.68 (2.21 with optional conversion) million fewer square feet of employment-generating uses than the 2011 Approved Project, improves the jobs-housing balance within Irvine and the region.

The existing General Plan land use map designates the Proposed Project Site as Orange County Great Park land uses, and contemplates the development of a mixed-use community such as the 2012 Modified Project. The proposed General Plan Amendment would be consistent with the existing uses and surrounding development. Moreover, the proposed Zone Change is consistent with the proposed General Plan Amendment and would better facilitate the development of the mixed-use community that was already contemplated by the existing General Plan land use designation. Therefore, the 2012 Modified Project would not be growth inducing as a result of making a precedent-setting action.

In addition, the Proposed Project Site is already approved for development with the 2011 Approved Project, and the area surrounding the Proposed Project Site is either already developed or entitled for development. The Proposed Project Site is surrounded by urban development and is generally bounded by residential developments to the west and north, general industrial/research and development uses as well the Irvine Spectrum to the south, and the City of Lake Forest to the east. Other nearby local jurisdictions include the cities of Costa Mesa, Laguna Hills, Laguna Niguel, Laguna Woods, Newport Beach, Santa Ana, Tustin, and the County of Orange. As such, approval of the 2012 Modified Project will not involve a precedent setting action that could encourage or facilitate development within the surrounding area.

9. Significant Irreversible Changes Due to the Modified Project

Section 15126.2(c) of the CEQA Guidelines requires that this DSSEIR describe any significant irreversible environmental changes that would be caused by the 2012 Modified Project should it be implemented. The 2011 Approved Project includes the development of 4,894 residential dwelling units and 6,585,594 square feet of non-residential uses, 5,312,564 square feet of which are located within the Heritage Fields Development Districts and the remaining 1,273,030 square feet of which are within the Great Park, County Parcels, and other areas. In comparison, the 2012 Modified Project would add 4,606 (5,806 with the optional conversion) residential units, but would reduce non-residential square footage for the Heritage Fields Development Districts to 4,902,200 (4,367,200 with the optional conversion). The differences between the 2011 Approved Project and 2012 Modified Project are described more fully in Chapter 3, *Project Description*, as well as throughout Chapter 5, *Environmental Analysis*, of this DSSEIR. As demonstrated in those Chapters and in the discussion below, the 2012 Modified Project would have approximately the same significant irreversible changes as the 2011 Approved Project.

Like the 2011 Approved Project, implementation of the 2012 Modified Project would allow construction activities that would entail the commitment of non-renewable and/or slowly renewable energy resources; human resources; and natural resources, such as: lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metal, and water. An increased commitment of social services and public maintenance services (e.g., police, fire, schools, libraries, sewer, water, solid waste, and natural gas services) would also be required. As is true for the 2011 Approved Project, the energy, natural resources, and social and public maintenance services commitments would be long-term obligations.

Like the 2011 Approved Project, the 2012 Modified Project would be developed on the Proposed Project Site, requiring a long-term irreversible commitment of the use of land. After the 50- to 75-year structural lifespan of new building construction for either the 2011 Approved Project or the 2012 Modified Project is reached, it is improbable that the Proposed Project Site would revert to either a military base or an undeveloped condition due to the large capital investment in infrastructure and other surrounding development and amenities that would already have been committed. The following lists the significant irreversible changes that were considered likely to result from implementation of the 2011 Approved Project, and no additional irreversible changes are likely to result from implementation of the 2012 Modified Project:

- The commitment of nonrenewable and/or slowly renewable energy resources, including gasoline, diesel fuel, electricity, human resources, and natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, and water for construction.
- An increased commitment of social services and public maintenance services (e.g., police, fire, schools, libraries, and sewer and water services) would be required under the 2012 Modified Project. The public maintenance and social service commitments would be long-term obligations.

9. Significant Irreversible Changes Due to the Modified Project

- An increase in vehicle trips related to population and job growth. Over the long term, emissions associated with such vehicle trips would continue to contribute to the South Coast Air Basin's nonattainment designation for ozone.

Given the low likelihood that the land would revert to a military base or undeveloped uses, both the 2011 Approved Project and the 2012 Modified Project would generally commit future generations to these environmental changes. Although the 2012 Modified Project would increase the number of dwelling units and would decrease non-residential use square footage as compared to the 2011 Approved Project, the associated irreversible environmental changes are very similar between the two Projects. The significant irreversible changes listed above were discussed in the 2011 Certified EIR and remain similar for the 2012 Modified Project.

8. *Impacts Found Not to Be Significant*

California Public Resources Code Section 21003 (f) states: "...it is the policy of the state that...[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in CEQA Guidelines Section 15126.2(a), which states that "[a]n EIR [Environmental Impact Report] shall identify and focus on the significant environmental impacts of the proposed project," and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment." The CEQA Guidelines allow use of an Initial Study to document project effects that are less than significant (Guidelines Section 15063[a], [c]). Guidelines Section 15128 requires that an EIR contain a statement that briefly indicates the reasons that various possible significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the Draft EIR. The discussion in this chapter is provided pursuant to those requirements.

As described in Section 1.2.2, *Type and Purpose of This DSSEIR*, this DSSEIR has been prepared as a supplement to the 2011 Certified EIR consistent with Public Resources Code Section 21166 and CEQA Guidelines Sections 15162 and 15163. Pursuant to those sections, the 2012 Modified Project, as compared to the 2011 Approved Project, would not result in any new significant impacts or an increase in the severity of significant impacts previously identified for the 2011 Approved Project for the impacts listed below.

8.1 *ASSESSMENT IN THE INITIAL STUDY*

A Notice of Preparation ("NOP") of this DSSEIR and an Initial Study for the 2012 Modified Project were distributed by the City on April 3, 2012, to the State Clearinghouse, responsible agencies, and interested parties (See Appendix A of this DSSEIR). The Initial Study prepared for the 2012 Modified Project determined that the impacts of the 2012 Modified Project, as compared to the 2011 Approved Project, listed below would be less than significant. Consequently, they have not been further analyzed in this DSSEIR. Impact categories and questions below, which were contained in the 2012 Modified Project's Initial Study, are summarized directly from the CEQA Environmental Checklist, which may be used by the City to determine whether impacts may be potentially significant. The justification for the Initial Study determinations is provided below. In particular, the Initial Study determined that none of the impacts to Geology and Soils, Mineral Resources, Cultural Resources, and Biological Resources would result in any new significant impacts based on the conditions set forth in Section 15162 of the CEQA Guidelines and did not warrant further study. However, the mitigation measures from the Mitigation Monitoring and Reporting Program (MMRP) for the 2011 Approved Project relating to these topics are part of the 2012 Modified Project. As a result, the 2011 Approved Project's mitigation measures are restated in Table 1-1, *Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Additional Mitigation*, of this DSSEIR.

8. Impacts Found Not to Be Significant

Table 8-1
Modified Project Impacts Found Not to Be Significant

<i>Environmental Issue</i>	<i>Initial Study Determination</i>	<i>Discussion</i>
1. AESTHETICS. Would the project:		
A) Have a substantial adverse effect on a scenic vista?	No Impact	As described in the 2011 Certified EIR, there are no scenic vistas on or in the vicinity of the Proposed Project Site. Compared to the 2011 Approved Project, the 2012 Modified Project would increase the number of residential units but decrease the non-residential uses being developed. However, development under the 2012 Modified Project would occur within the same envelope analyzed in the 2011 Certified EIR for the 2011 Approved Project (i.e. the Proposed Project Site is within the Approved Project Site), with the exception of the 11-acre TCA Parcel. Those 11 acres do not contain any scenic vista, and development on them together with the development of the rest of the 2012 Modified Project would not interfere with public views of any scenic vista. Further, development of the 2012 Modified Project would be largely of the same scale and height as the 2011 Approved Project. No additional impacts are associated with the 2012 Modified Project as compared to the 2011 Approved Project.
B) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact	As described in the 2011 Certified EIR, there are no scenic resources on or in the vicinity of the Proposed Project Site. Compared to the 2011 Approved Project, the 2012 Modified Project would increase the number of residential units but decrease the non-residential uses being developed. However, development under the 2012 Modified Project would occur within the same envelope analyzed in the 2011 Certified EIR for the 2011 Approved Project (i.e. the Proposed Project Site is within the Approved Project Site), with the exception of the 11-acre TCA Parcel. Those 11 acres do not contain any scenic resources. Further, development of the 2012 Modified Project would be largely of the same scale and height as the 2011 Approved Project. No additional impacts on scenic resources are associated with the 2012 Modified Project as compared to the 2011 Approved Project.
2. AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:		
C) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact	No areas within the Proposed Project Site are zoned for forest land, timberland, or timberland production. Therefore, like the 2011 Approved Project, the 2012 Modified Project would not create any impact.

8. Impacts Found Not to Be Significant

Table 8-1

Modified Project Impacts Found Not to Be Significant

D) Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact	Three woodland plant communities were identified onsite in the 2011 Certified EIR: Mexican elderberry woodland, coast live oak woodland, and riparian vegetation. The 2012 Modified Project does not propose to develop any forest land areas that were not previously planned for development by the 2011 Approved Project. Thus, the 2012 Modified Project would not result in any new impacts to forest land as compared to the 2011 Approved Project. Mitigation Measure Bio-4 for the 2011 Approved Project requires a tree survey by an arborist; trees greater than six inches in diameter at chest height, and trees designated significant by the arborist, would be protected under the City of Irvine's Urban Forestry Ordinance. Mitigation Measure Bio-4 is incorporated into the 2012 Modified Project. Therefore, no new impacts associated with the 2012 Modified Project, as compared to the 2011 Approved Project, would occur with regard to forest land.
E) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No Impact	With respect to Farmland, the 2012 Modified Project would only directly affect a 13-acre area in District 6 (formerly District 9) that is currently in agricultural production and designated for permanent agriculture. However, this area is not surrounded by any existing agricultural uses that would be affected by the 2012 Modified Project so as to be incompatible with agricultural uses. Therefore, no additional conversion of farmland to a non-agricultural uses would be associated with the 2012 Modified Project as compared to the 2011 Approved Project.

3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

E) Create objectionable odor affecting a substantial number of people?	No Impact	As described in the 2011 Certified EIR, no land uses handling large amounts of solid waste, chemicals associated with heavy industry, or other uses that may generate objectionable odors were proposed by the 2011 Approved Project. The 2012 Modified Project generally proposes the same types of land uses as the 2011 Approved Project, none of which would generate offensive odors affecting substantial numbers of people. No new impacts relating to odors would be associated with the 2012 Modified Project as compared to the 2011 Approved Project.
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4. BIOLOGICAL RESOURCES. Would the project:

A) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact	Impacts to the Southern tarplant, a federal species of concern, were identified in the 2011 Certified EIR as less than significant after implementation of Mitigation Measure Bio-1 adopted by the MMRP for the 2011 Approved Project, which is incorporated into the 2012 Modified Project. The 2012 Modified Project would not develop any areas that were not previously identified for development in the 2011 Approved Project, with the exception of the 11-acre TCA Parcel and the 13 acres in District 6 (former District 9). Development of the TCA Parcel would not impact any such species since it has been previously graded and consists of non-native grasses.
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8. Impacts Found Not to Be Significant

*Table 8-1
Modified Project Impacts Found Not to Be Significant*

		Development of the 13 acres previously zoned for agriculture and currently being used for agricultural production also would not impact such species. Therefore, no additional biological impacts are associated with the 2012 Modified Project as compared to the 2011 Approved Project.
B) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact	The 2011 Certified EIR found that coastal sage scrub is considered sensitive in regards to the habitat it provides for the California gnatcatcher, and that, due to the large amount of land designated for habitat preserve and protected in perpetuity, no significant impact would occur. It further found that small portions of the habitat preserve have been or may be conveyed to other agencies for non-habitat uses, but that the City did not have any control over those transfers. The 2012 Modified Project would not develop any areas that were not previously identified for development in the 2011 Approved Project or that are not otherwise disturbed. The 11-acre TCA parcel was previously graded and contains only non-native grasses. Therefore, no additional biological impacts are associated with the 2012 Modified Project as compared to the 2011 Approved Project.
C) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact	Impacts to federally protected wetlands were evaluated in the 2011 Certified EIR and determined to be less than significant with incorporation of Mitigation Measure Bio-2, which was adopted in the MMRP for the 2011 Approved Project and is incorporated in the 2012 Modified Project. The 2012 Modified Project would not develop any areas containing wetlands that were not previously identified for development in the 2011 Approved Project. Therefore, no new impacts to federally protected wetlands would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
D) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No Impact	No impacts to wildlife corridors or wildlife movement were identified in the 2011 Certified EIR. Even so, the 2011 Certified EIR and associated MMRP included Mitigation Measure B-3, related to implementation of the Approved Wildlife Corridor Feature, which is incorporated in the 2012 Modified Project. All of the areas proposed for development on the Proposed Project Site under the 2012 Modified Project were already proposed for development under the 2011 Approved Project, with the exception of the TCA Parcel and the 13 acres located in District 6 (former District 9) which do not contain any wildlife corridors or native wildlife nursery sites. Under the 2012 Modified Project, the 13 acres will be rezoned to allow for the Relocated Wildlife Corridor Feature consistent with Mitigation Measure B-3 adopted by the MMRP for the 2011 Approved Project. Both the 2011 Approved Project and the 2012 Modified Project include wildlife corridor features and drainage corridors. No additional impacts would occur related to wildlife corridors or movement of species within the 2012 Modified Project as compared to the 2011 Approved Project.

8. Impacts Found Not to Be Significant

Table 8-1
Modified Project Impacts Found Not to Be Significant

E) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact	Impacts to tree resources were evaluated in the 2011 Certified EIR and identified as less than significant after implementation of Mitigation Measure Bio-4 adopted in the MMRP for the 2011 Approved Project, which requires a tree survey by an arborist, and which has been incorporated into the 2012 Modified Project. Trees greater than six inches in diameter at chest height, and trees designated significant by the arborist, would be protected under the City's Urban Forestry Ordinance. The 2012 Modified Project would not develop any areas that were not previously identified for development in the 2011 Approved Project, with the exception of the TCA Parcel, which does not contain tree resources. Therefore, no additional biological resource impacts would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
F) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact	No significant impacts to Natural Community Conservation Plans (NCCPs) or Habitat Conservation Plans (HCPs) were identified in the 2011 Certified EIR. Approximately 974 acres offsite, in Planning Area Zone 3 of Existing PA 51, have been designated as a habitat preserve in accordance with the Orange County Central-Coastal NCCP. The habitat preserve has been conveyed to the Federal Aviation Administration ("FAA"), and it is expected that it will be managed in the future by the US Fish and Wildlife Service. None of the areas to be developed under the 2011 Approved Project or the 2012 Proposed Project is designated as habitat preserve. Therefore, development of the 2012 Modified Project would not conflict with an NCCP or Habitat Conservation Plan and no impacts would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
5. CULTURAL RESOURCES. Would the project:		
A) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	No Impact	Impacts to historical resources were identified as less than significant in the 2011 Certified EIR. Structures on the former Air Station were evaluated and found not to be eligible for listing on the National Register of Historic Places (NRHP), or as Legacy Cold War sites (the Legacy Cold War Project aids in the preservation of properties and objects from the Cold War period, 1945-1991). The 2012 Modified Project would not develop any areas containing cultural resources that were not part of the 2011 Approved Project, with the exception of the 11-acre TCA Parcel. These 11 acres do not contain any historical resources. Therefore, no additional impacts to historic resources would occur as a result of the 2012 Modified Project as compared to the 2011 Approved Project.
B) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	No Impact	Impacts to archaeological resources were evaluated in the 2011 Certified EIR and determined to be less than significant after implementation of Mitigation Measures Cult-1 through Cult-4 adopted in the MMRP for the 2011 Approved Project, which are incorporated into the 2012 Modified Project. The 2012 Modified Project would not develop any areas containing archaeological resources that were not part of the 2011 Approved Project, with the

8. Impacts Found Not to Be Significant

Table 8-1
Modified Project Impacts Found Not to Be Significant

		exception of the TCA Parcel. The incorporation of the 2011 Approved Project's Mitigation Measures Cult-1, Cult-2 and Cult-3 into the 2012 Modified Project, including with respect to the above-mentioned TCA Parcel, would reduce any potential impacts of the 2012 Modified Project on archeological resources to a less than significant level. Therefore, no additional impacts to archaeological resources would occur as a result of the 2012 Modified Project as compared to the 2011 Approved Project.
C) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No Impact	<p>As discussed in the 2011 Certified EIR, there are no unique geological features onsite. The majority of the Proposed Project Site, including the TCA Parcel, has little topographic relief, with 1.5 to 2.5-percent-grade slope to the west and southwest, and a gently sloping to steep hillside area at the eastern section of the Proposed Project Site.</p> <p>The 2011 Certified EIR found that impacts to paleontological resources would be less than significant after mitigation. Mitigation Measure P-1 adopted in the MMRP for the 2011 Approved Project would also be incorporated into the 2012 Modified Project. This Mitigation Measure would also reduce any potential impact of the 2012 Modified Project on paleontological resources to a less than significant level. Therefore, no additional impacts to archaeological resources would occur as a result of the 2012 Modified Project as compared to the 2011 Approved Project.</p>
D) Disturb any human remains, including those interred outside of formal cemeteries?	No Impact	<p>The 2011 Certified EIR found that impacts of the 2011 Approved Project to cultural resources, including human remains, would be less than significant after mitigation. The 2012 Modified Project incorporates Mitigation Measure Cult-4 adopted in the MMRP for the 2011 Approved Project, which would reduce impacts to human remains to a less than significant level. Therefore, no new impacts to human remains would occur with the 2012 Modified Project as compared to the 2011 Approved Project.</p>

6. GEOLOGY AND SOILS. Would the project:

A) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:		
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Source: Division of Mines and Geology Special Publication 42)	No Impact	<p>The 2012 Modified Project would develop one additional area, the TCA Parcel, that was not previously identified for development in the 2011 Approved Project. This area includes 11 acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard. However, no earthquake faults have been identified within this area or otherwise in the Proposed Project Site, as shown in General Plan Figure D-2 and the 2011 Certified EIR.</p> <p>The risk of surface rupture of a fault affecting the 2012</p>

8. Impacts Found Not to Be Significant

*Table 8-1
Modified Project Impacts Found Not to Be Significant*

		<p>Modified Project is extremely low due to the lack of active faults crossing through or projecting into the Proposed Project Site, as demonstrated by the <i>Project Geology And Seismicity Update to Support the 2012 Modified Project In the Second Supplemental Environmental Impact Report</i> (ENGEO 2012) (the "2012 Updated Geotechnical Opinion") prepared for the 2012 Modified Project (see Appendix M of this DSSEIR). The two active faults nearest to the Proposed Project Site shown on the California Geological Survey (CGS) 2010 Fault Activity Map of California are a branch of the Newport-Inglewood Fault located approximately 11.8 miles west of the Proposed Project Site, and the Elsinore Fault located approximately 12.4 miles northeast of the Proposed Project Site (CGS 2011). (An active fault shows evidence of displacement within the last 11,700 years.)</p> <p>Therefore, no additional fault rupture impacts would occur as a result of the 2012 Modified Project as compared to the 2011 Approved Project.</p>
ii) Strong seismic ground shaking?	No Impact	<p>The 2011 Certified EIR found that hazards arising from strong ground shaking would be less than significant after implementation of Mitigation Measures GS-1 through GS-3 adopted in the MMRP for the 2011 Approved Project, which are incorporated into the 2012 Modified Project. The 2012 Updated Geotechnical Opinion affirmed the conclusion in the 2011 Certified EIR that implementation of Mitigation Measure GS-1 would reduce hazards from seismic ground shaking to less than significant levels. All structures developed pursuant to the 2012 Modified Project would be required to comply with California Building Code seismic safety provisions. Therefore, no additional impacts related to ground shaking would occur as a result of the 2012 Modified Project as compared to the 2011 Approved Project.</p>
iii) Seismic-related ground failure, including liquefaction?	No Impact	<p>Hazards arising from liquefaction were identified as less than significant in the 2003 OCGP EIR.</p> <p>Unlike the 2003 OCGP EIR, the <i>Geology And Seismicity Update to Support the Supplemental Environmental Impact Report</i> (ENGEO 2011) (the "2011 Updated Geotechnical Opinion") prepared for the 2011 Approved Project in conjunction with the 2011 SEIR stated that liquefaction hazard impacts of the 2011 Approved Project were potentially significant, but that implementation of one or more measures and current code-prescribed design methodology would reduce the liquefaction hazard impacts of the 2011 Approved Project to less than significant. This analysis was confirmed by the 2012 Updated Geotechnical Opinion for the 2012 Modified Project. As was true for the 2011 Approved Project, the selection of the appropriate methods to be used for the 2012 Modified Project would be based on development type and local ground conditions (ENGEO 2012).</p>

8. Impacts Found Not to Be Significant

*Table 8-1
Modified Project Impacts Found Not to Be Significant*

		<p>Thus, the potential for liquefaction that would result from the 2012 Modified Project will be analyzed by site-specific geological investigations prior to grading and construction of individual projects in accordance with the City's Grading Ordinance. With implementation of recommendations for reducing liquefaction hazard to be contained in geotechnical investigation reports done for individual areas within the 2012 Modified Project, and design of structures according to current code-prescribed methods, liquefaction hazard impacts of the 2012 Modified Project would be less than significant, as they are for the 2011 Approved Project.</p> <p>Therefore, no additional impacts related to seismic-related ground failure, including liquefaction, would occur as a result of the 2012 Modified Project as compared to the 2011 Approved Project.</p>
iv) Landslides?	No Impact	<p>Landslide hazards were identified as a potentially significant impact in the 2011 Certified EIR. The 2011 Certified EIR concluded that hazards related to landslides would be less than significant after conformance with the City's Grading Ordinance and implementation of Mitigation Measure GS-2 adopted in the MMRP for the 2011 Approved Project, both of which are applicable to the 2012 Modified Project. Therefore, no additional impacts related to landslides would occur as a result of the 2012 Modified Project as compared to the 2011 Approved Project.</p>
B) Result in substantial soil erosion or the loss of topsoil?	No Impact	<p>Soil erosion impacts were determined in the 2011 Certified EIR to be less than significant after implementation of Mitigation Measures GS-2 and GS-4. Mitigation Measures GS-2 and GS-4, adopted in the MMRP for the 2011 Approved Project, are incorporated into the 2012 Modified Project.</p> <p>The 2012 Updated Geotechnical Opinion affirmed that implementation of Mitigation Measures GS-2 and GS-4 <u>adopted in the MMRP for the 2011 Approved Project</u> would also reduce soil erosion impacts of the 2012 Modified Project to less than significant levels. Therefore, no additional impacts related to soil erosion are associated with the 2012 Modified Project as compared to the 2011 Approved Project.</p>
C) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	No Impact	<p>As stated in the 2011 Certified EIR, most soils on the Proposed Project Site are considered well suited for grading and construction. Potential impacts related to soil instability were identified to be less than significant impact of the 2011 Approved Project in the 2011 Certified EIR.</p> <p>The 2012 Updated Geotechnical Opinion concluded with respect to the 2012 Modified Project that:</p> <ul style="list-style-type: none"> • Landslide hazards would be reduced to less than significant levels by implementation of

8. Impacts Found Not to Be Significant

*Table 8-1
Modified Project Impacts Found Not to Be Significant*

		<p>Mitigation Measure GS-2 adopted in the MMRP for the 2011 Approved Project and by corrective grading in Existing PA-30 and Existing PA-51.</p> <ul style="list-style-type: none"> • Lateral spreading hazards do not appear to be present for the majority of Existing PA-30 and Existing PA-51 based on the level of geotechnical explorations to date along select drainage corridors. Based on a 2011 study for the TCA Parcel, lateral spreading is a potential hazard if hydrostatic conditions in proximity to the top of cut slope are not controlled. Lateral spreading hazards at the TCA Parcel and site-wide would be reduced to less than significant levels by implementation of the Approved Project's Mitigation Measure GS-2 through design and corrective grading in Existing PA-30 and Existing PA-51. • Potential liquefaction hazards exist in District 7 of Existing PA-51, portions of Existing PA-30 and in the TCA Parcel if hydrostatic conditions in proximity to the top of cut slope are not controlled. Liquefaction hazards would be reduced to less than significant levels by implementation of the Approved Project's Mitigation Measure GS-2 through design and corrective grading in Existing PA-30 and Existing PA-51. • Potential subsidence hazards are present on the Proposed Project Site in the existing undocumented fill area under the former officers housing area of District 7 and in various locations in Existing PA-51 and Existing PA-30 where there are less extensive undocumented fills or compressible surface soils. These hazards will be avoided through compliance with the City's Grading Ordinance, as well as by implementation of the Approved Project's Mitigation Measure GS-2. <p>Therefore, no additional impacts related to soil instability would result from the 2012 Modified Project as compared to the 2011 Approved Project.</p>
D) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	No Impact	<p>Some expansive soils may be present in localized areas within the Proposed Project Site. However, the 2011 Certified EIR concluded that hazards arising from expansive soils would be less than significant after implementation of Mitigation Measure GS-2 adopted in the MMRP for the 2011 Approved Project, which is incorporated into the 2012 Modified Project.</p> <p>The 2012 Updated Geotechnical Opinion for the 2012</p>

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Table 8-1
Modified Project Impacts Found Not to Be Significant

		<p>Modified Project stated that expansive soils hazards would also be reduced to less than significant levels through implementation of recommendations contained in six previous ENGEO reports (2010) prepared for the 2011 Approved Project.</p> <p>Therefore, no additional impacts related to expansive soils would occur with the 2012 Modified Project as compared to the 2011 Approved Project.</p>
E) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact	<p>All future development in the 2011 Approved Project and in the 2012 Modified Project would include sewer connections. No septic tanks or alternative wastewater disposal systems would be used, and therefore no additional impacts related to the use of septic tanks would occur with the 2012 Modified Project as compared to the 2011 Approved Project.</p>

8. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

A) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	No Impact	<p>As described in the 2011 Certified EIR, the potential impacts of the 2011 Approved Project related to the transport, use, or disposal of hazardous materials would be less than significant. The 2012 Modified Project would convert some of the existing non-residential intensity in the 2011 Approved Project to residential uses. As a result, the potential for the transport, use or disposal of hazardous materials would be reduced. Therefore, no additional impact related to the use or disposal of hazardous materials would occur with the 2012 Modified Project as compared to the 2011 Approved Project.</p>
B) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	No Impact	<p>As described in the 2011 Certified EIR, the potential impacts of the 2011 Approved Project related to the potential release of hazardous materials into the environment would be mitigated to a less than significant level through implementation of PPPs 4-2, 4-4, 4-5 4-6, 4-7, 4-8 from the 2011 Certified EIR (renumbered as PPPs 5-2, 5-4, 5-5 5-6, 5-7, 5-8 in this DSSEIR) and Mitigation Measures HH1, HH5, and HH6, adopted in the MMRP for the 2011 Approved Project. These PPPs and MMs would also be applicable to the 2012 Modified Project. The 2012 Modified Project consists of the same types of residential and non-residential uses proposed under the 2011 Approved Project. Therefore, no additional impacts related to the potential release of hazardous materials would occur with the 2012 Modified Project as compared to the 2011 Approved Project.</p>
C) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No Impact	<p>As described in the 2011 Certified EIR, the 2011 Approved Project's potential impacts related to potential release of hazardous materials within one-quarter mile of an existing or proposed school would be mitigated to a less than significant level through implementation of PPPs 4-2, 4-4, 4-5 4-6, 4-7, 4-8 from the 2011 Certified EIR (renumbered as PPPs 5-2, 5-4, 5-5 5-6, 5-7, 5-8 in this DSSEIR) and Mitigation Measures HH1 and HH5, adopted in the MMRP for the 2011 Approved Project. These PPPs and MMs would also be applicable to the 2012 Modified Project. The 2012 Modified Project</p>

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*Table 8-1
Modified Project Impacts Found Not to Be Significant*

		consists of the same types of residential and non-residential uses proposed under the 2011 Approved Project. Therefore, no impacts related to the potential release of hazardous materials within one-quarter mile of an existing or proposed school would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
E) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	No Impact	The Proposed Project Site is not located within two miles of a public airport. Therefore, no impacts related to safety hazards would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
F) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	No Impact	The Proposed Project Site is not located within or near any private airstrip or airport. Therefore, no impacts related to private airstrips would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
G) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No Impact	As described in the 2011 Certified EIR, the 2011 Approved Project's potential impacts related to emergency response plans would be less than significant. The 2012 Modified Project's conversion of non-residential intensity to residential uses would not conflict with any emergency response plans adopted by the City or the County of Orange. Therefore, no impacts related to emergency plans would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
H) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	No Impact	As described in the 2011 Certified EIR, the potential impacts related to wildland fires would be mitigated to a less than significant level through implementation of PPP 4-3 (renumbered as PPP 5-3 in this DSSEIR) and Mitigation Measure HH-3 adopted in the MMRP for the 2011 Approved Project. This PPP and this MM would also be applicable to the 2012 Modified Project. The changes associated with the 2012 Modified Project are not located adjacent to any high wildland fire hazard areas. Though not considered a high wildland fire hazard area, the Relocated Wildlife Corridor Feature includes fuel modification requirements for locations within its boundary that are adjacent to urban uses. Therefore, no impacts related to wildland fire hazards would occur with the 2012 Modified Project as compared to the 2011 Approved Project.

8. Impacts Found Not to Be Significant

Table 8-1

Modified Project Impacts Found Not to Be Significant

9. HYDROLOGY AND WATER QUALITY. Would the project:		
B) Substantially deplete groundwater supplies or substantially interfere with groundwater recharge such that there would be a net deficient in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Less Than Significant Impact	The 2012 Modified Project would convert some of the existing non-residential entitlement to residential uses. The conversion of land planned for commercial/industrial land uses to residential land is expected to provide additional landscaped areas available for groundwater recharge as compared to the 2011 Approved Project. Therefore, potential impacts to groundwater recharge associated with the 2012 Modified Project would be reduced as compared to the 2011 Approved Project.
I) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	No Impact	As discussed in the 2011 Certified EIR, there are no levees or dams near the Approved Project Site, within which is located the Proposed Project Site. Therefore, the 2011 Certified EIR concluded that the 2011 Approved Project would result in no significant impact with respect to risk of loss, injury, or death involving flooding. For this same reason, no impacts regarding flooding due to levees or dams would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
J) Inundation by seiche, tsunami, or mudflow?	No Impact	<p>The 2011 Certified EIR concluded that the 2011 Approved Project would not result in any significant impacts with respect to inundation by seiche, tsunami or mudflow.</p> <p>A seiche is a surface wave created when an inland water body is shaken, usually by an earthquake. As the 2011 Certified EIR concluded, there are no inland bodies of water, dams or levees that could pose a substantial flood hazard to the Proposed Project Site due to a seiche.</p> <p>A mudflow is a landslide composed of saturated rock debris and soil with a consistency of wet cement. There are no slopes on the Proposed Project Site that could pose a substantial flood hazard due to a mudflow.</p> <p>A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. The Proposed Project Site is located nine miles inland from the Pacific Ocean and is protected by the San Joaquin Hills, and is thus not at risk of flooding due to a tsunami.</p> <p>For these same reasons, the 2012 Modified Project would not result in any significant impacts with respect to inundation by seiche, tsunami or mudflow as compared to the 2011 Approved Project.</p>

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Table 8-1

Modified Project Impacts Found Not to Be Significant

10. LAND USE AND PLANNING. Would the project:		
A) Physically divide an established community?	No impact	The 2011 Certified EIR stated that there were no residents living at the site of the 2011 Approved Project, and that, as a result, the 2011 Approved Project would not physically divide an established community. There are no residents currently living on the Proposed Project Site. Therefore, the 2012 Modified Project also would not physically divide an established community. Therefore, no impacts related to division of an established community would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
C) Conflict with any applicable habitat conservation plan or natural community conservation plan?	No Impact	No significant impacts to Natural Community Conservation Plans (NCCPs) or Habitat Conservation Plans (HCPs) were identified in the 2011 Certified EIR, and none have been identified for the 2012 Modified Project (see above). Approximately 974 acres, located in Planning Area Zone 3 of Existing PA 51, have been designated habitat preserve in accordance with the Orange County Central-Coastal NCCP. The Habitat Preserve has been conveyed to the Federal Aviation Administration, with the Department of the Interior managing the land as part of the NCCP/HCP. Since inclusion of the Habitat Preserve is consistent with the adopted NCCP/HCP, the 2011 Approved Project was found not to result in an impact to any applicable HCP or NCCP. The 2012 Modified Project would not develop any NCCP/HCP areas that were not previously identified for development in the 2011 Approved Project. Therefore, development of the 2012 Modified Project would not conflict with an NCCP or Habitat Conservation Plan as compared to the 2011 Approved Project.
11. MINERAL RESOURCES. Would the project:		
A) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	No Impact	The 2011 Certified EIR concluded that the 2011 Approved Project would not result in any impact on mineral resources as its site did not contain any such resources. Most of the Proposed Project Site is mapped as Mineral Resource Zone 1 (MRZ-1) by the California Geological Survey, designating areas where available geologic information indicates there is little likelihood that significant mineral resources are present. The central and eastern parts of District 7 are mapped as MRZ-3, designating areas containing known or inferred mineral resources of unknown significance (CDGM 1994). No changes are being proposed for District 7 under the 2012 Modified Project. As a result, implementation of the 2012 Modified Project would not cause a loss of availability of mineral resources as compared to the 2011 Approved Project, and no impact would occur.
B) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No Impact	As noted immediately above, the 2011 Certified EIR concluded that the 2011 Approved Project would not result in any impact on mineral resources as the Approved Project Site did not contain any such resources. The TCA Parcel is mapped as Mineral Resource Zone 1 (MRZ-1) by the California Geological Survey, designating areas where available geologic information indicates there is little

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Table 8-1
Modified Project Impacts Found Not to Be Significant

		likelihood that significant mineral resources are present. Therefore, no impact would occur relating to the loss of availability of a locally important mineral resource with the 2012 Modified Project as compared to the 2011 Approved Project.
12. NOISE. Would the project result in:		
B) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Less Than Significant Impact	Ground vibrations from construction activities rarely reach levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to a construction site. Building damage is not a factor for normal projects, with the occasional exception of blasting and pile-driving during construction (FTA 2006), but these activities would not occur with the 2011 Approved Project or the 2012 Modified Project. As is true for the 2011 Approved Project, construction activities associated with the 2012 Modified Project will be subject to the limitations and requirements of Section 6-8-205(a) of the City's Noise Ordinance (7:00 AM and 7:00 PM Mondays through Fridays, and 9:00 AM and 6:00 PM on Saturdays). Therefore, no new significant impacts related to vibration or groundborne noise levels would occur as a result of the 2012 Modified Project as compared to the 2011 Approved Project.
E) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact	The Proposed Project Site is not within an airport land use plan or within two miles of a public-use airport. As a result, neither the 2011 Approved Project nor the 2012 Modified Project would expose people residing or working in the Proposed Project Site to excessive noise levels. Therefore, no airport-related noise impacts would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
F) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	No Impact	There are no private airstrips located near the Proposed Project Site, and no corresponding impacts would occur. As a result, neither the 2011 Approved Project nor the 2012 Modified Project would expose people residing or working in the Proposed Project Site to excessive noise levels. Therefore, no impacts related to an airstrip would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
13. POPULATION AND HOUSING. Would the project:		
B) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	No Impact	According to the 2011 Certified EIR, there are no residents currently living on the site of the 2011 Approved Project, and therefore the 2011 Approved Project would not create an adverse impact to housing supply. As is true for the 2011 Approved Project, implementation of the 2012 Modified Project would not require construction of replacement housing because there are no residents currently living on the Proposed Project Site. To the contrary, the 2012 Modified Project would permit construction of additional housing units as compared to the 2011 Approved Project, and would thus have a favorable impact on housing supply in Irvine. Therefore, no impacts related to displacement of housing would occur with the 2012 Modified Project as compared to the 2011 Approved Project.

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Table 8-1

Modified Project Impacts Found Not to Be Significant

C) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	No Impact	According to the 2011 Certified EIR, there are no residents currently living on the site of the 2011 Approved Project, and therefore the 2011 Approved Project would not result in any adverse impact related to displacement of people. There are also no residents living on the Proposed Project Site, as stated above. Therefore, no impacts related to displacement of people would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
16. TRANSPORTATION/TRAFFIC. Would the project:		
C) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	No Impact	The nearest airport to the Proposed Project Site is John Wayne Airport, located six miles to the west. The 2011 Certified EIR identified no significant impacts relating to air traffic. Implementation of the 2012 Modified Project on the Proposed Project Site would not require a change in location of air traffic patterns. Therefore, no air traffic impacts would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
D) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No Impact	According to the 2011 Certified EIR, the 2011 Approved Project would not increase any hazards impact due to a design feature. Like the 2011 Approved Project, the 2012 Modified Project includes proposed improvements to area roadways and new roadways within the Proposed Project Site. All new roadways and improvements to existing roadways would be designed and built in compliance with local, regional, and state agency requirements. Therefore, no hazards impacts would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
E) Result in inadequate emergency access?	No Impact	According to the 2011 Certified EIR, the 2011 Approved Project would not result in any impacts related to emergency access. As set forth in Section 5.9 of this DSSEIR, adequate police and fire services are available to serve the 2012 Modified Project. Like the 2011 Approved Project, the existing and proposed roadway system in the 2012 Modified Project would provide adequate emergency access to all uses on-site and would not affect off-site emergency access. Therefore, no additional emergency access impacts are associated with the 2012 Modified Project as compared to the 2011 Approved Project.
17. UTILITIES AND SERVICE SYSTEMS. Would the project:		
A) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	Less Than Significant Impact	Both the 2012 Modified Project and the 2011 Approved Project would be required to comply with the wastewater treatment requirements of the Santa Ana Regional Water Quality Control Board. Therefore, no impacts to wastewater treatment would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
B) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	Less Than Significant Impact	Although this issue was identified as a "Less than Significant Impact" in the Initial Study, it is addressed in this DSSEIR to provide greater information. Please refer to Section 5.13, <i>Utilities and Service Systems</i> , for a discussion of the 2012 Modified Project's potential impacts related to water or wastewater facilities.

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Table 8-1

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G) Comply with federal, state, and local statutes and regulations related to solid waste?	Less than Significant Impact	The 2011 Approved Project's impacts relating to solid waste disposal were identified in the 2011 Certified EIR as being less than significant with implementation of Mitigation Measures SW-1 through SW-5; those Mitigation Measures were adopted in the MMRP for the 2011 Approved Project and are incorporated into the 2012 Modified Project. Additionally, the 2012 Modified Project would, like the 2011 Approved Project, comply with laws and regulations governing solid waste disposal. Therefore no impacts related to solid waste would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
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18. MANDATORY FINDINGS OF SIGNIFICANCE.

A) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	No Impact	For the reasons stated above, the 2012 Modified Project would not create any new or more severe impacts related to biological resources and cultural resources as compared to the 2011 Approved Project, and, therefore, the 2011 Certified EIR adequately addressed potential impacts related to biological resources and cultural resources. Therefore, no impacts to biological or cultural resources would occur with the 2012 Modified Project as compared to the 2011 Approved Project.
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8.2 POST INITIAL STUDY ASSESSMENT

After the completion of the Initial Study for the 2012 Modified Project, it was determined that Segments 2 and 3 of the Approved Wildlife Corridor Feature would be relocated to the eastern boundary of the Proposed Project Site adjacent to Borrego Canyon Channel within Districts 5 and 6, as shown on previous Figure 3-5, *Proposed Wildlife Corridor Relocation*, of this DSSEIR. The conclusions in the Initial Study would be equally applicable to the Relocated Wildlife Corridor Feature: in particular, an additional review of Biological Resources impacts showed that the relocation of a portion of the Approved Wildlife Corridor Feature would not have potentially significant impacts. The analysis included in Table 8-1 below, which demonstrates that no significant Biological Resources impacts would occur due to the relocation of a portion of the Approved Wildlife Corridor Feature, is based on the following documents:

- *Biological Technical Report For: Irvine Wildlife Corridor Relocation Heritage Fields 2012 General Plan Amendment and Zone Change*, Glenn Lukos Associates, June 30, 2012, included as Appendix N in this DSSEIR.
- *Technical Memorandum: Relocated Wildlife Corridor Feature – Light and Noise*, Glenn Lukos Associates, June 30, 2012, included as Appendix O in this DSSEIR.

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Construction of the wildlife corridor feature (Approved or Relocated) is not the result of the need for any mitigation that is necessary or required to offset any significant impacts; rather, it is a design feature of the Great Park development and will provide for wildlife movement functions.

*Table 8-2
Post Initial Study Assessment*

<i>Environmental Issue</i>	<i>Initial Study Determination</i>	<i>Discussion</i>
BIOLOGICAL RESOURCES. <i>Would the project:</i>		
A) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact	<p>The footprint of the proposed Relocated Wildlife Corridor Feature consists predominantly of non-native vegetation and includes no areas of native habitat capable of supporting special-status plants, including southern tarplant (<i>Centromadia parryi australis</i>) or animals, with one potential exception: the burrowing owl (<i>Athene cunicularia</i>) (wintering only) (a California Species of Concern). The 2011 Certified EIR also identified the mountain plover (<i>Charadrius montanus</i>) as exhibiting potential for occurring on site; in fact, however, further review shows this species breeds on the northern plains of the U.S. and is on occasion, a winter visitor in parts of Central California, but does not occur on the Proposed Project Site.</p> <p>Because of the flat topography of the Proposed Project Site, low growing vegetation and the presence of the California ground squirrel (and their associated burrows), the site exhibits potential for supporting wintering burrowing owls. Wintering burrowing owls typically arrive in November and remain on the wintering grounds until late February or early March. Potential impacts to wintering burrowing owls were addressed in Mitigation Measure Bio-1 for the 2011 Approved Project, which requires pre-construction surveys for the burrowing owl and that certain steps be taken to avoid or minimize impacts if any burrowing owls are observed. With implementation of Mitigation Measure Bio-1, which is already incorporated into the 2012 Modified Project, direct harm to an owl would be avoided and any potential impacts would be reduced to less than significant.</p> <p>The Approved Wildlife Corridor Feature and the Relocated Wildlife Corridor Feature would include similar types of vegetation. Mulefat scrub and southern willow scrub, combined, would provide suitable vegetation for Least Bell's vireo breeding as well as areas for movement and foraging for the bobcat, coyote and California Gnatcatcher. Further, coastal sage scrub would provide potential breeding vegetation for the California Gnatcatcher, and, along with southern cactus scrub, would provide stepping stones for California Gnatcatchers. The southern cactus scrub would also provide suitable vegetation for the coastal cactus wren as well as the California Gnatcatcher. Both vegetation types would provide cover and foraging areas for the bobcat and coyote and areas immediately adjacent to the areas of riparian</p>

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		<p>vegetation would provide foraging areas for the Least Bell's vireo.</p> <p>A former landfill which has been capped is partly within the location of the Approved Wildlife Corridor Feature, and the Relocated Wildlife Corridor Feature also encompasses this former landfill. The Navy has published an Operations and Monitoring/Long Term Monitoring Plan which defines land use restrictions. Per this plan, the Relocated Wildlife Corridor Feature is an acceptable use of the capped landfill, and all land use restrictions associated with this area can, and will be followed in developing the Relocated Wildlife Corridor Feature. This area is intended to provide breeding areas for the coastal cactus wren and California Gnatcatcher, live-in areas for the bobcat, and movement areas for the bobcat, coyote, cactus wren, and California Gnatcatcher. Planting these areas in a mosaic would also provide a fuel break that would inhibit north to south moving fires (typical of strong Santa Ana wind conditions) as well as fuel breaks within the first approximately 150 feet from future development areas expected along the western boundary of the Relocated Wildlife Corridor Feature and provide open areas for raptor foraging.</p> <p>In addition, the 2012 Modified Project proposes the following PPPs which reflect existing laws that were also in effect at the time the 2003 OCGP EIR was certified:</p> <p>PPP 13-1 All construction activities shall comply with the federal Migratory Bird Treaty Act of 1918 (MBTA). The MBTA governs the taking and killing of migratory birds, their eggs, parts, and nests and prohibits the take of any migratory bird, their eggs, parts, and nests. Compliance with the MBTA shall be accomplished by the following:</p> <ul style="list-style-type: none">• If vegetation is to be cleared during the nesting season (March 1 to September 1), all suitable habitat shall be thoroughly surveyed for the presence of nesting birds by a qualified Biologist no more than 72 hours prior to clearing. The survey results shall be submitted by the Property Owner/Developer to the Director of Community Development.• If any active nests are detected, the area shall be flagged and mapped on the construction plans along with a buffer distance to be determined by the qualified Biologist. The buffer area shall be avoided until the nesting cycle is complete or until the Biologist has determined that the nest has failed. In addition, the Biologist shall be present on the site to monitor the vegetation removal to ensure that any nests that were not detected during the initial survey are not disturbed. <p>PPP 13-2 All construction activities shall comply with Sections 3503, 3503.5 and 3513 of the California Fish and Game Code, which protect active nests of any raptor species, including common raptor species. Compliance</p>
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		<p>with these codes shall be accomplished by the following:</p> <ul style="list-style-type: none"> • If vegetation is to be cleared during the raptor nesting season (February 1 to June 30), all suitable habitat within 300 feet of the Project sites shall be thoroughly surveyed for the presence of nesting raptors (including burrowing owl) by a qualified Biologist 72 hours prior to clearing. The survey results shall be submitted by the Property Owner/Developer to the Director of Community Development and the California Department of Fish and Game. • If any active nests are detected, the area shall be flagged and mapped on the construction plans along with a minimum 300-foot buffer, with the final buffer distance to be determined by the qualified Biologist. The buffer area shall be avoided until the nesting cycle is complete or until it is determined that the nest has failed. In addition, the Biologist will be present on the site to monitor the vegetation removal. <p>Therefore, no additional impacts to special status species are associated with the 2012 Modified Project as compared to the 2011 Approved Project.</p>
B) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact	<p>The 2011 Certified EIR found that coastal sage scrub is considered sensitive in regards to the habitat it provides for the California gnatcatcher, and that, due to the large amount of land designated for habitat preserve and protected in perpetuity, no significant impact would occur as a result of the 2011 Approved Project. It further found that small portions of the habitat preserve have been or may be conveyed to other agencies for non-habitat uses, but that the City did not have any control over those transfers. The Relocated Wildlife Corridor Feature does not change the amount of land designated for habitat preserve or the ownership of such land. Therefore, no additional impacts on any riparian habitat or other sensitive natural community are associated with the 2012 Modified Project, including the Relocated Wildlife Corridor Feature, as compared to the 2011 Approved Project.</p>
C) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact	<p>Impacts to federally protected wetlands were evaluated in the 2011 Certified EIR and determined to be less than significant for the 2011 Approved Project with incorporation of Mitigation Measure Bio-2 adopted in the MMRP for the 2011 Approved Project, which is also incorporated in the 2012 Modified Project. The Relocated Wildlife Corridor Feature would not result in the development of any areas containing wetlands that were not previously identified for development in the 2011 Approved Project. Therefore, no new impacts to federally protected wetlands would occur with the 2012 Modified Project as compared to the 2011 Approved Project.</p>
D) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or	No Impact	<p>As discussed herein, no significant adverse impacts are associated with the proposed Relocated Wildlife Corridor Feature, as compared to the Approved Wildlife Corridor Feature. No adverse impacts to wildlife corridors or wildlife movement were identified in the 2011 Certified</p>

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impede the use of native wildlife nursery sites?		<p>EIR for the 2011 Approved Project. Even so, the 2011 Certified EIR included Mitigation Measure BIO3, which was adopted in the MMRP for the 2011 Approved Project and is incorporated in the 2012 Modified Project, related to implementation of the Approved Wildlife Corridor Feature. Further, potential road and/or trail crossings of the Relocated Wildlife Corridor Feature would be constructed with sufficient clearance to allow for movement of target species, thereby allowing for free passage of wildlife. In addition, wildlife fencing located at these points would be designed to prevent wildlife from crossing at grade.</p> <p>All of the areas proposed for development on the Proposed Project Site under the 2012 Modified Project were already proposed for development under the 2011 Approved Project, with the exception of the TCA Parcel, which does not contain any wildlife corridor or native wildlife nursery site. Under the 2012 Modified Project, land located in Districts 5 and 6 currently zoned 8.1 TTOD, and the 13 acres located in District 6, currently zoned 1.1 Agriculture, will be rezoned to 1.4 Preservation to allow for development of the Relocated Wildlife Corridor Feature. Both the 2011 Approved Project and the 2012 Modified Project include a wildlife corridor. No additional impacts would occur related to wildlife corridors or movement of species within the 2012 Modified Project as compared to the 2011 Approved Project.</p>
E) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact	<p>Impacts to tree resources were evaluated in the 2011 Certified EIR for the 2011 Approved Project and identified as less than significant after implementation of Mitigation Measure Bio-4, adopted in the MMRP for the 2011 Approved Project, which requires a tree survey by an arborist, and which has been incorporated into the 2012 Modified Project. Trees greater than six inches in diameter at chest height, and trees designated significant by the arborist, would be protected under the City's Urban Forestry Ordinance. The Relocated Wildlife Corridor Feature would not have any significant impacts to tree resources through compliance with Mitigation Measure Bio-4. Therefore, no additional conflicts with local policies or ordinances protecting biological resources are associated with the 2012 Modified Project, including the Relocated Wildlife Corridor Feature, as compared to the 2011 Approved Project.</p>
F) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact	<p>The Relocated Wildlife Corridor Feature does not result in any conflict with the provisions of Natural Community Conservation Plans (NCCPs) or Habitat Conservation Plans (HCPs); no such plans were identified in the 2011 Certified EIR. Approximately 974 acres outside of the Proposed Project Area have been designated habitat preserve in accordance with the Orange County Central-Coastal NCCP. The habitat preserve has been conveyed to the Federal Aviation Administration ("FAA"), and it is expected that it will be managed in the future by the US Fish and Wildlife Service. The 2012 Modified Project, including the Relocated Wildlife Corridor Feature, would not develop any areas designated as habitat preserve. Therefore, development of the 2012 Modified Project, including the Relocated Wildlife Corridor Feature, would</p>

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		not conflict with an NCCP or Habitat Conservation Plan and no impacts would occur with the 2012 Modified Project, including the Relocated Wildlife Corridor Feature, as compared to the 2011 Approved Project.
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7. Alternatives to the 2012 Modified Project

7.1 INTRODUCTION

7.1.1 Purpose and Scope

CEQA requires that an EIR include a discussion of a reasonable range of project alternatives that would “feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives” (CEQA Guidelines Section 15126.6). This chapter identifies potential alternatives to the 2012 Modified Project and evaluates them, as required by CEQA.

Key provisions of the CEQA Guidelines on alternatives (Section 15126.6[a] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis of an EIR.

- “The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly” (CEQA Guidelines 15126.6[b]).
- “The specific alternative of ‘no project’ shall also be evaluated along with its impact” (CEQA Guidelines 15126.6[e][1]).
- “The no project analysis shall discuss the existing conditions at the time the Notice of Preparation (NOP) is published, or if no notice of preparation is published, at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives” (CEQA Guidelines 15126.6[e][2]).
- “The range of alternatives required in an EIR is governed by a ‘rule of reason’ that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project” (CEQA Guidelines 15126.6[f]).
- “Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)” (CEQA Guidelines 15126.6[f][1]).

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- For alternative locations, “only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR” (CEQA Guidelines 15126.6[f][2][A]).
- “An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative” (CEQA Guidelines 15126.6[f][3]).

This alternatives analysis differs from a typical alternatives analysis because the 2011 Approved Project is vested and therefore it is not legally feasible to reduce the previously approved densities. In addition, impacts of the 2012 Modified Project are generally similar to the 2011 Approved Project so that there is no alternative that would reduce an identified significant impact to less than significant. Moreover, there are benefits of the 2012 Modified Project that will be greater than the 2011 Approved Project. For example, the 2012 Modified Project would provide a mechanism to accelerate the funding and implementation of the Great Park improvements.

For each development alternative, this analysis:

- Describes the alternative.
- Analyzes the impact of the alternative as compared to the 2012 Modified Project.
- Identifies the impacts of the 2012 Modified Project that would be avoided or lessened by the alternative.
- Assesses whether the alternative would meet most of the basic project objectives of the 2012 Modified Project.
- Evaluates the comparative merits of the alternative and the 2012 Modified Project.

Per CEQA Guidelines Section 15126.6(d), additional significant effects of the alternatives are discussed in less detail than the significant effects of the 2012 Modified Project.

7.1.2 Project Objectives

As described in Section 3.2, *Statement of Objectives*, of this DSSEIR, the following objectives have been established for the 2012 Modified Project and will aid decision makers in their review of the 2012 Modified Project, the project alternatives, and their respective environmental impacts:

Land Use

- Implement the project objectives stated in the 2011 Certified EIR.
- Redevelop and reuse a portion of the former MCAS El Toro Property for a mixed-use community adjacent to the Great Park, consistent with the General Plan.
- Increase the amount of property within “Combined PA 51” (formerly Existing PA 30 and Existing PA 51) that is zoned 8.1 Trails and Transit Oriented Development (TTOD) to provide greater flexibility in meeting City General Plan Goals.
- Advance the State's and Southern California Association of Governments’ (“SCAG”) policies to provide sustainable mixed-use development and to reduce trips and vehicle miles travelled in automobiles and light trucks.

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- Help meet the City's Regional Housing Needs Assessment.
- Provide for a range of housing types in a location that is responsive to current and anticipated demands and is supportive of continued economic growth within the City.
- Convert existing non-residential intensity to residential uses through a revised land use plan in Combined PA 51, thereby providing a better balance of population and employment to increase internal trip capture and reduce vehicle miles travelled and improve the jobs/housing balance in jobs-rich Irvine.
- Establish a revised land use plan in Combined PA 51 to create a mixed-use community with neighborhood serving land uses near residences as well as employment centers.
- Combine Existing PAs 30 and 51 into a single PA, Combined PA 51, so that the 2012 Modified Project will be a cohesive development governed by a unified set of land use and development regulations.
- Better accommodate projected regional growth in an infill location that is adjacent to existing and planned infrastructure, urban services, transit, transportation corridors, and major employment centers.
- Establish a revised land use plan that permits a wide range of housing densities, types, styles, prices, and tenancy (for sale and rental).
- Create a mixed-use community that optimizes the open space and recreational opportunities in the adjacent Great Park.
- Provide for a fiscally sound land use plan that includes public and commercial uses to support and enhance the new residential community and other residential communities in the vicinity.
- Provide additional market rate and affordable housing opportunities near existing employment and transportation centers, consistent with the City's General Plan Land Use and Housing Elements, SB 375 and SCAG's Regional Comprehensive Plan.
- Provide a biologically effective wildlife corridor that meets the goals of the City's General Plan, while relocating Segments 2 and 3 of the Approved Wildlife Corridor Feature in order to provide greater flexibility in developing a mixed-use community that meets City General Plan goals.

Transportation

- Provide a safe, efficient, and aesthetically attractive street system with convenient connections to adjoining transportation routes.
- Allow level of service (LOS) "E" to be considered a potentially acceptable level of service within certain high activity, mixed-use areas within the Proposed Project Site, to be consistent with other areas of the City and to promote use of alternative modes of transportation.

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- Provide a walkable community through the use of innovative traffic calming techniques such as roundabouts designed to slow traffic, and pedestrian pathways.
- Create a highly livable, pedestrian-friendly environment that encourages alternative means of transportation to the automobile by incorporating unique site designs and enhanced pedestrian access between land uses, trails, and streets.

Open Space

- Create a medium-density, mixed-use community that optimizes the open space and recreational opportunities in the adjacent Orange County Great Park.
- Provide new parks, trails and public open space, and complete connections to regional trails in City's General Plan Trails Map.
- Advance funding for the implementation of recreational facilities for the Great Park.

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

In accordance with CEQA Guidelines Section 15126.6(c), this section identifies alternatives that were considered by the City during the scoping process but that were rejected as infeasible and briefly explains the reasons underlying the City's determination not to analyze them further in this DSSEIR.

7.2.1 No Project/ No Development

As described in the 2011 Certified EIR, under this alternative, no development would occur at the Proposed Project Site and the existing physical conditions would remain, despite the fact that development of the 2011 Approved Project has already been approved. This alternative is infeasible because it is contrary to the Applicant's vested rights under the ARDA and under the 2011 Approved Project. The Applicant is vested to develop 4,894 residential units and approximately 5.3 million square feet of non-residential development within the Heritage Fields Development Districts. This No Project / No Development alternative would require the City to revoke those entitlements, which the City cannot legally do. For these reasons, the City has determined that the No Project/No Development Alternative is not a legally feasible alternative to the 2012 Modified Project.

7.2.2 Reduction of Dwelling Units

Under this alternative, the number of dwelling units on the Proposed Project Site would be reduced to below 4,894. As stated above with respect to the No Project/ No Development Alternative, the Applicant has vested rights to develop 4,894 dwelling units and approximately 5.3 million square feet of non-residential within the Heritage Fields Development Districts. Therefore, the City cannot prohibit the Applicant from developing all of these uses even if a reduction in the amount of residential and/or non-residential uses developed would mitigate significant impacts. For these reasons, the City has determined that the Reduction of Dwelling Units Alternative is not a legally feasible alternative to the 2012 Modified Project.

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7.2.3 Different Site Alternative

The 2011 Certified EIR concluded:

Development of the Project at an alternative location would likely result in a similar, and in some cases, greater impacts than those identified in this Final Program EIR. Furthermore, it has been determined that no feasible alternative locations exist considering the fact that the project is the reuse of the former MCAS El Toro.

(2003 OCGP EIR at 6-2.) There are no other properties within Irvine or within the City's Sphere of Influence under the ownership or control of the Applicant that would accommodate the 2012 Modified Project and that would satisfy the objectives for the 2012 Modified Project. Nor is there any land outside the City's jurisdiction which could reasonably be acquired by the Applicant and which would accommodate the 2012 Modified Project. In addition, the Applicant has a vested right to develop the 2011 Approved Project on the Proposed Project Site. The 2012 Modified Project cannot be moved to a different location without moving the 2011 Approved Project along with it, which is not legally feasible.

For these reasons, the City determined that an alternative development site for the 2012 Modified Project would not be a feasible alternative. (CEQA Guidelines § 15126.6(f)(2)(B).)

7.2.4 Increased Residential Development

This alternative would consist of all of the changes to the 2011 Approved Project that are proposed by the 2012 Modified Project without the optional conversion, except that more multi-family residential units would be permitted as compared to the 2012 Modified Project, creating more intense residential development and a more transit-oriented and pedestrian friendly development. Thus, under this alternative, the number of residential units in Combined PA 51 would be more than the 10,700 dwelling units proposed by the 2012 Modified Project (with the optional conversion). This alternative would allow the same amount of non-residential development to be developed within the Heritage Fields Development Districts as the 2012 Modified Project. Except as described previously, all other characteristics (e.g., lighting, landscaping, etc.) of the 2012 Modified Project would be the same in this alternative.

The objective of this alternative would be to decrease the significant air quality impacts that would be created by the 2012 Modified Project through the development of higher density multi-family uses in close proximity to transit facilities. However, traffic studies for the 2011 Approved Project have shown that even increased residential development is likely to have VMT rates and increased trips that would still cause significant air quality impacts. Indeed, even if the VMT were reduced to that of the 2011 Approved Project, the significant air quality impacts would remain. In addition, this alternative would result in increases in other impacts as compared to the 2012 Modified Project, including for example impacts on police, fire, schools, libraries and utilities. Other alternatives with similar characteristics (i.e. increasing the number of residential dwelling units by varying amounts) were considered, and rejected for the same reasons.

7.2.5 Increased Non-Residential Development

This alternative would consist of all of the changes to the 2011 Approved Project that are proposed by the 2012 Modified Project without the optional conversion, except that more Multi-Use development would be permitted as compared to the 2012 Modified Project, creating more intense non-residential

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development and a more office-transit-oriented development. This alternative would allow the same number of residential dwelling units as the 2012 Modified Project (without the conversion) and more non-residential development than the 2012 Modified Project. Except as described previously, all other characteristics (e.g., lighting, landscaping, etc.) of the 2012 Modified Project would be the same in this alternative.

The objective of this alternative would be to decrease the significant air quality impacts that would be created by the 2012 Modified Project through the development of additional non-residential uses in close proximity to transit. However, with the increased non-residential development, it is likely that the VMT rates and trips would increase so as to cause greater significant air quality impacts. Indeed, even if the VMT level were reduced to that of the 2011 Approved Project, the significant air quality impact would remain. Moreover, this alternative, while creating substantial employment opportunities in the area, would also increase the jobs/housing ratio compared to that of the 2012 Modified Project, which has a balanced jobs/housing ratio and therefore does not have a significant impact. Unlike the 2011 Approved Project, the 2012 Modified Project does not have a significant impact with respect to jobs/housing. In addition, this alternative would result in increases in other impacts as compared to the 2012 Modified Project, including for example impacts on utilities. Thus, this alternative would result in more significant impacts than would the 2012 Modified Project. Other alternatives with similar characteristics (i.e. increasing the non-residential development by varying amounts) were considered, and rejected for the same reasons.

7.2.6 Increased Residential and Non-Residential Development

This alternative would include all of the changes to the 2011 Approved Project that are proposed by the 2012 Modified Project without the optional conversion, except that more multi-family residential units and more non-residential development would be permitted as compared to the 2012 Modified Project, creating more intense residential and non-residential development and a more transit-oriented and pedestrian friendly development. Except as described previously, all other characteristics (e.g., lighting, landscaping, etc.) of the 2012 Modified Project would be the same in this alternative.

The objective of this alternative would be to decrease the significant air quality impacts that would be created by the 2012 Modified Project through the development of additional mixed-uses in close proximity to transit. However, even with the increased mixed-use development, it is likely that the VMT rates and trips would increase so as to cause greater significant air quality impacts. Indeed, even if the VMT level were reduced to that of the 2011 Approved Project, the significant air quality impact would remain. Moreover, this alternative, while creating substantial employment opportunities in the area, would also increase the jobs/housing ratio compared to that of the 2012 Modified Project, which has a balanced jobs/housing ratio and therefore does not have a significant impact, unless residential developments were provided in substantially higher proportions than non-residential development. In addition, this alternative would result in increases in other impacts as compared to the 2012 Modified Project, including for example impacts on police, fire, schools, libraries and utilities. Thus, this alternative would result in more significant impacts than would the 2012 Modified Project. Other alternatives with similar characteristics (i.e. increasing the number of residential dwelling units and non-residential intensity by varying amounts) were considered, and rejected for the same reasons.

7.2.7 Reduced Residential

This alternative would involve the conversion to fewer residential units in the Heritage Fields Development than would be converted in the 2012 Modified Project, with or without the optional

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conversion. Because less conversion would occur, there would be more non-residential development than in the 2012 Modified Project. All of the other changes to the 2011 Approved Project that are proposed by the 2012 Modified Project would remain the same to the extent they are consistent with the aforementioned land uses. Moreover, this alternative, while creating substantial employment opportunities in the area, would also increase the jobs/housing ratio compared that of the 2012 Modified Project. The 2012 Modified Project does not have a significant impact with respect to jobs/housing, which has a balanced jobs/housing ratio and therefore does not have a significant impact. Thus, this alternative would result in more significant impacts than would the 2012 Modified Project. Other alternatives with similar characteristics (i.e. addition of fewer residential units to the 2011 Approved Project) were considered, and rejected for the same reasons.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria set forth in CEQA and the CEQA Guidelines concerning alternatives, the City has determined that the following two alternatives represent a reasonable range of alternatives. As described above, due to the unique circumstance that the Applicant has vested rights to develop 4,894 dwelling units and approximately 5.3 million square feet of non-residential development within the Heritage Fields Development Districts, there are no legally feasible alternatives that could avoid or substantially lessen one or more identified effects. These alternatives are analyzed in detail in the following sections.

- No Project/2011 Approved Project Alternative
- Marine Way Realignment Alternative

CEQA requires the alternatives analysis to include a No Project Alternative. The purpose of analyzing a No Project Alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (CEQA Guidelines § 15126.6[e][1]). According to CEQA Guidelines section 15126.6(e)(2), the No Project Alternative "shall discuss the existing conditions at the time the notice of preparation is published... as well as what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved, based on current plans, and consistent with available infrastructure and community services." This chapter analyzes in detail one No Project alternative. (Section 7.2.1, *No Project/No Development*, discusses why the No Project/No Development scenario is not analyzed in this DSSEIR.)

An EIR must identify an "environmentally superior" alternative. Where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated (CEQA Guidelines § 15126.6(e)). Each alternative's environmental impacts are compared to those of the 2012 Modified Project and determined to be environmentally superior, neutral, or inferior. The assessment of those alternatives chosen for detailed analysis focuses on the significant impacts of the 2012 Modified Project, particularly those determined in this DSSEIR to be significant prior to mitigation as analyzed in Chapter 5 of this DSSEIR.

Chapter 8 of this DSSEIR, *Impacts Found Not to Be Significant*, substantiates the City's determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR) that effects associated with a variety of impacts would be less than significant for the 2012 Modified Project, as compared to the 2011 Approved Project. For the same reasons as described in Chapter 8 of this DSSEIR, each of the alternatives analyzed in this chapter would have the same less than significant impact or no impact as the 2012 Modified Project, including, but not limited to, certain impacts in the following CEQA environmental factors: aesthetics, agricultural resources, air quality, greenhouse gas emissions, biological

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resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, transportation and traffic and utilities and service systems. The impacts analyses contained in Chapter 8 of this DSSEIR are incorporated by reference into the analysis of each of the alternatives below.

Section 7.7 identifies the Environmentally Superior Alternative. Table 7-1 provides a summary of each project alternative analyzed in this chapter.

The environmental impacts of the 2012 Modified Project as compared to the 2011 Approved Project are analyzed in detail in Chapter 5 of this DSSEIR.

*Table 7-1
Summary of Alternatives to the 2012 Modified Project*

<i>Alternative</i>	<i>Description</i>	<i>Basis for Selection and Summary of Analysis</i>
2012 MODIFIED PROJECT		
2012 Modified Project	See Section 1.4, <i>Project Summary</i> , and Chapter 3, <i>Project Description</i> .	Not Applicable
PROJECT ALTERNATIVES		
No Project/2011 Approved Project Alternative	The Approved Project Site would be developed with the 2011 Approved Project, including 4,894 dwelling units located on five Vesting Tentative Tract Maps in Districts 1 North, 1 South, 4, 7 and 8, and approximately 5.3 million square feet of non-residential uses.	This alternative would not avoid or substantially reduce any of the significant impacts of the 2012 Modified Project. In fact, for the reasons detailed below, this alternative's impacts related to population and housing would be significant and unavoidable, and therefore greater than for the 2012 Modified Project's less than significant impact. In addition, this alternative would not advance funding for the implementation of recreational facilities for the Great Park. All impacts of this alternative, including aesthetics, air quality, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, recreation, transportation and traffic, and utilities and service systems, would be similar to those of the 2012 Modified Project.
Marine Way Realignment Alternative	This alternative has been developed to provide an alternate alignment for Marine Way from Sand Canyon to Bake Parkway. All other components of the 2012 Modified Project would remain the same under this alternative.	This alternative was studied in an effort to reduce traffic and construction impacts associated with the 2012 Modified Project. Since this alternative does not change the land uses proposed by the 2012 Modified Project, most of the impacts of this alternative analyzed would be the same as for the 2012 Modified Project.

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7.4 NO PROJECT/2011 APPROVED PROJECT ALTERNATIVE

This No Project/2011 Approved Project Alternative is the circumstance under which the 2012 Modified Project would not proceed on the Proposed Project Site, and the 2011 Approved Project would be built in its place on the Approved Project Site. At the time the Notice of Preparation was published for the 2012 Modified Project, the Approved Project Site was vested for development of the 2011 Approved Project, including 4,894 dwelling units and approximately 5.3 million square feet of non-residential development within the Heritage Fields Development Districts.

Under this No Project/2011 Approved Project Alternative, the 4,894 dwelling units would be located in their existing locations under the 2011 Approved Project on the five Vesting Tentative Tract Maps approved for Districts 1 North, 1 South, 4, 7 and 8, respectively, and 5.3 million square feet of non-residential development would be located within the Heritage Fields Development Districts as entitled under the 2011 Approved Project. This alternative would also include implementation of the Master Plans and Park Plans for Districts 1 North, 1 South, 4, 7 and 8, implementation of the 2nd Amended VTTM 17008, and implementation of the Amendments to Master Landscape and Trails Plan. Additionally, under the No Project/2011 Approved Project Alternative, the boundaries of Existing PAs 30 and 51 would remain as is; the TCA Property would remain within the boundaries of PA 9 and would not be rezoned to 8.1 Trails and Transit Oriented Development; no rezoning of Districts 2, 3, 6 and the City Parcels to 8.1 Trails and Transit Oriented Development would occur; the Option 2 Main Street development along Trabuco Road would not occur; the right to convert non-residential development to residential units would not occur; the Relocated Wildlife Corridor Feature would not occur; and the amendment of Figure B-1 to the Master Plan of Arterial Highways would not occur. In addition, this No Project/2011 Approved Project Alternative would not advance funding for the implementation of recreational facilities for the Great Park.

Aesthetics

Potential impacts associated with scenic vistas, visual character, and light and glare under this alternative would be similar to those of the 2012 Modified Project, as analyzed in Section 5.1, *Aesthetics* of this DSSEIR. As there are no scenic vistas or scenic resources on or near the Proposed Project Site, no significant impacts would occur to scenic vistas or scenic resources under either this alternative or the 2012 Modified Project. Likewise, the visual character of the Proposed Project Site, including light and glare, would remain the same because the same general types of residential and nonresidential uses would be developed under this alternative and under the 2012 Modified Project. Therefore, the overall character and development area at buildout of the Proposed Project Site under this alternative would be similar to that of the 2012 Modified Project, and the impacts of this alternative, like that of the 2012 Modified Project, would be less than significant.

Agricultural Resources

The 2011 Certified EIR, which analyzed the impacts of the 2011 Approved Project, concluded that the 2011 Approved Project would not result in an impact to agricultural resources; consequently this alternative also would not result in an impact to agricultural resources. Although the 2012 Modified Project would rezone 13 acres in District 6 currently zoned 1.1 Exclusive Agriculture to 1.4 Preservation to allow for the development of the Relocated Wildlife Corridor Feature, the analysis included in Section 5.2, *Agricultural Resources* of this DSSEIR demonstrates that the conversion of this farmland would result in a less than significant impact on agricultural resources and would not conflict with the proposed

7. Alternatives to the Modified Project

zoning or surrounding agricultural uses. As such, neither this alternative nor the 2012 Modified Project would result in a significant impact on agricultural resources.

Because no areas within the Proposed Project Site are zoned for forest land, timberland, or timberland production, neither this alternative nor the 2012 Modified Project would create any impact on these resources. Both this alternative and the 2012 Modified Project propose to develop the same forest land areas, and both incorporate Mitigation Measure Bio-4 from the 2011 Certified EIR and associated MMRP, which requires a tree survey by an arborist; trees greater than six inches in diameter at chest height and trees designated significant by the arborist would be protected under the City's Urban Forestry Ordinance. Therefore, both this alternative and the 2012 Modified Project would result in the same conversion of forest land to non-forest land use. Neither this alternative nor the 2012 Modified Project would result in any other impacts to agricultural resources.

Air Quality

Implementation of the No Project/2011 Approved Project Alternative would allow development of the fewer residential units and greater non-residential intensity as compared to the 2012 Modified Project. Since the Proposed Project Site falls within the Approved Project Site (except the TCA Parcel), this alternative would result in a similar area of disturbance, construction equipment mix, and phasing as the 2012 Modified Project. As is true for the 2012 Modified Project, this alternative would result in significant short-term mass criteria air pollutant construction emissions of VOC, NO_x, PM₁₀, PM_{2.5}, and CO. Therefore, as for the 2012 Modified Project, the regional construction-related air quality impacts under this alternative would remain significant and unavoidable.

As is true for the 2012 Modified Project, the long-term operation-related mass criteria air pollutant emissions of this alternative would exceed the significance thresholds for VOC, NO_x, CO, and PM_{2.5}. However, as the analysis in Section 5.3, *Air Quality*, of this DSSEIR demonstrates, this alternative's operational mass criteria pollutant emissions would be slightly lower than the 2012 Modified Project's. Even so, as is true for the 2012 Modified Project, operation-related air quality impacts under this alternative would remain significant and unavoidable.

This alternative has the same number of residential units and the same amount of non-residential uses as the 2011 Approved Project, which the 2011 Certified EIR concluded would be consistent with the 2007 AQMP. Therefore, this alternative would likewise be consistent with the 2007 AQMP, as is the 2012 Modified Project.

Neither this alternative nor the 2012 Modified Project propose to include any land uses that would involve handling large amounts of solid waste, chemicals associated with heavy industry, or other uses that may generate objectionable odors. Therefore, neither this alternative nor the 2012 Modified Project would result in any adverse odor impact.

Overall, the construction- and operation-related air quality impacts associated with this alternative would be similar (i.e., significant and unavoidable) to the 2012 Modified Project. Therefore, this alternative would not reduce or avoid the level of any of the 2012 Modified Project's significant and unavoidable air quality impacts.

7. Alternatives to the Modified Project

Biological Resources

As discussed in Chapter 8, *Impacts Found Not To Be Significant*, of this DSSEIR, impacts to the Southern tarplant, a federal species of concern, were identified in the 2011 Certified EIR as less than significant after implementation of Mitigation Measure Bio-1, which is incorporated into both this alternative and the 2012 Modified Project. The 2012 Modified Project would not develop any areas that were not previously identified for development in the 2011 Approved Project, with the exception of the 11-acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard. Development of the 11 acres would not impact any such species since it has been previously graded and consists of non-native grasses. Therefore, the 2012 Modified Project and this alternative would have the same less than significant biological impacts on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

The 2011 Certified EIR found that coastal sage scrub is considered sensitive in regards to the habitat it provides for the California gnatcatcher, but that, due to the large amount of land designated for habitat preserve and protected in perpetuity, no significant impact would occur as a result of the development of the 2011 Approved Project. It further found that small portions of the NCCP Reserve have been or may be conveyed to other agencies for non-habitat uses, but that the City did not have any control over those transfers. The 2012 Modified Project would not develop any areas that were not previously identified for development in the 2011 Approved Project or that are not otherwise disturbed. Therefore, both the 2012 Modified Project and this alternative would have the same less than significant biological impacts on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Impacts to federally protected wetlands were evaluated in the 2011 Certified EIR and determined to be less than significant with incorporation of Mitigation Measure BIO-2, which is incorporated in the 2012 Modified Project. The 2012 Modified Project would not develop any areas containing wetlands that were not previously identified for development in the 2011 Approved Project. Therefore, both the 2012 Modified Project and this alternative would result in the same less than significant impacts to federally protected wetlands.

All of the areas proposed for development on the Proposed Project Site under the 2012 Modified Project were already proposed for development under the 2011 Approved Project, with the exception of the 11-acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard. Both the 2011 Approved Project and the 2012 Modified Project include a wildlife corridor and drainage corridors. Therefore, both this alternative and the 2012 Modified Project would result in the same less than significant impacts related to wildlife corridors or movement of species.

Impacts to tree resources were evaluated in the 2011 Certified EIR and identified as less than significant after implementation of Mitigation Measure Bio-4, which requires a tree survey by an arborist; this mitigation measure has been incorporated into the 2012 Modified Project. Trees greater than six inches in diameter at chest height, and trees designated significant by the arborist, would be protected under the City's Urban Forestry Ordinance. The 2012 Modified Project would not develop any areas containing tree resources that were not previously identified for development in the 2011 Approved Project, with the exception of the 11-acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard which do not contain tree resources. Therefore, both this

7. Alternatives to the Modified Project

alternative and the 2012 Modified Project would be consistent with local policies and ordinances protecting biological resources, and result in the same less than significant impacts.

No significant impacts to Natural Community Conservation Plans (NCCPs) or Habitat Conservation Plans (HCPs) were identified in the 2011 Certified EIR. Approximately 974 acres offsite, in Planning Area Zone 3 of Existing PA 51, have been designated habitat preserve in accordance with the Orange County Central-Coastal NCCP. The habitat preserve has been conveyed to the Federal Aviation Administration (“FAA”), and it is expected that it will be managed in the future by the US Fish and Wildlife Service. The 2012 Modified Project would not develop any areas designated as habitat preserve in the 2011 Approved Project, or on the Proposed Project Site. Therefore, neither this alternative nor the 2012 Modified Project would conflict with an NCCP or Habitat Conservation Plan and both would result in a less than significant impact.

Cultural Resources

As discussed in Chapter 8, *Impacts Found Not To Be Significant*, of this DSSEIR, impacts to historical resources were identified as less than significant in the 2011 Certified EIR for the 2011 Approved Project. The 2012 Modified Project would not develop any areas that were not part of the 2011 Approved Project, with the exception of the 11-acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard. The 11 acres do not contain any historical resources. Therefore, neither this alternative nor the 2012 Modified Project would result in any impact to historic resources.

Impacts to archaeological resources were evaluated in the 2011 Certified EIR and determined to be less than significant after implementation of Mitigation Measures Cult-1 through Cult-4, which are incorporated into both the 2011 Approved Project and the 2012 Modified Project. The 2012 Modified Project would not develop any areas that were not part of the 2011 Approved Project, with the exception of the 11 acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard. The incorporation of Mitigation Measures Cult-1, Cult-2 and Cult-3 from the 2011 Certified EIR and associated MMRP into the 2012 Modified Project, including the abovementioned 11 acres, would reduce any potential impacts of the 2012 Modified Project on archeological resources to a less than significant level. Therefore, both this alternative and the 2012 Modified Project would result in less than significant impacts to archaeological resources.

As discussed in the 2011 Certified EIR, there are no unique geological features within the Approved Project Site. The majority of the Proposed Project Site, including the 11 acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard, has little topographic relief, with 1.5 to 2.5-percent-grade slope to the west and southwest, and a gently sloping to steep hillside area at the eastern section of the Proposed Project Site. The 2011 Certified EIR found that the 2011 Approved Project's impacts to paleontological resources would be less than significant after mitigation. Mitigation Measure P-1 from the 2011 Certified EIR and associated MMRP is incorporated into the 2012 Modified Project, and would reduce any potential impact of the 2012 Modified Project on paleontological resources to a less than significant level. Therefore, both this alternative and the 2012 Modified Project would result in less than significant impacts to paleontological resources.

The 2011 Certified EIR found that the 2011 Approved Project's impacts to cultural resources, including human remains, would be less than significant with incorporation of Mitigation Measure Cult-4. The 2012 Modified Project also incorporates Mitigation Measure Cult-4 to reduce impacts to human remains to a

7. Alternatives to the Modified Project

less than significant level. Therefore, both this alternative and the 2012 Modified Project would result in less than significant impacts to cultural resources, including human remains.

Geology and Soils

As discussed in Chapter 8, *Impacts Found Not To Be Significant*, of this DSSEIR, both this alternative and the 2012 Modified Project would result in less than significant impacts from exposure of persons or structures to the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic related ground failure, including liquefaction, and landslides. No earthquake faults have been identified within the Proposed Project Site or the Approved Project Site, and, therefore, the risk of surface rupture of a fault affecting either this alternative or the 2012 Modified Project is extremely low. In addition, the 2011 Certified EIR concluded that hazards arising from strong ground shaking would be less than significant after implementation of Mitigation Measures GS-1 through GS-3, which are incorporated into both the 2011 Approved Project and the 2012 Modified Project; therefore, both this alternative and the 2012 Modified Project would have less than significant impacts related to ground shaking. Further, the 2011 Certified EIR concluded that, with implementation of one or more measures and current code-prescribed design methodology, based on development type and local ground conditions as determined by site-specific geological investigations prior to grading and construction of individual projects in accordance with the City's Grading Ordinance, the potential liquefaction impacts of both this alternative and the 2012 Modified Project would be reduced to less than significant. Finally, the 2011 Certified EIR concluded that hazards related to landslides would be less than significant after implementation of Mitigation Measure GS-2, which has already been imposed and is incorporated in the 2011 Approved Project, and conformance with the City's Grading Ordinance, both of which are applicable to the 2012 Modified Project; therefore, both this alternative and the 2012 Modified Project would have less than significant impacts related to landslides.

Soil erosion impacts were determined in the 2011 Certified EIR to be less than significant for the 2011 Approved Project after implementation of Mitigation Measures GS-2 and GS-4. Mitigation Measures GS-2 and GS-4 are incorporated into the 2012 Modified Project. Therefore, both this alternative and the 2012 Modified Project would have less than significant impacts related to soil erosion and loss of topsoil.

As stated in the 2011 Certified EIR, most soils on the Proposed Project Site are considered well suited for grading and construction. Potential impacts related to soil instability were identified to be less than significant impact in the 2011 Certified EIR for the 2011 Approved Project. Specifically, it was determined that Mitigation Measure GS-2 and corrective grading would reduce potential impacts due to landslide, lateral spreading, potential liquefaction, and subsidence hazards, which measures are also incorporated into the 2012 Modified Project. Therefore, both this alternative and the 2012 Modified Project would have less than significant impacts related to unstable soils.

The 2011 Certified EIR concluded that hazards arising from expansive soils would be less than significant for the 2011 Approved Project after implementation of Mitigation Measure GS-2, which has already been imposed and is incorporated into the 2012 Modified Project. Therefore, both this alternative and the 2012 Modified Project would have less than significant impacts related to expansive soils.

Neither this alternative nor the 2012 Modified Project includes the use of septic tanks or alternative wastewater disposal systems; therefore, neither would result in impacts related to the use of septic tanks.

7. Alternatives to the Modified Project

Greenhouse Gas Emissions

As discussed in Section 5.4, *Greenhouse Gas Emissions*, of this DSSEIR, the 2012 Modified Project would generate 162,406 metric tons (“MTons”) of greenhouse gas (“GHG”) emissions (CO₂e) per year without the optional conversion, and 164,152 MTons of CO₂e per year with the optional conversion, both of which include one-time amortized emissions from construction activities and one-time amortized carbon sequestration from vegetation changes. By contrast, as discussed in Section 5.4 of this DSSEIR, this alternative (the Heritage Fields Development portion of the 2011 Approved Project) would generate 146,573 MTons of CO₂e per year, but a slightly higher efficiency metric as compared to the 2012 Modified Project. However, both the 2012 Modified Project and this alternative would yield efficiency metrics below the SCAQMD's draft threshold of 4.8 MTons of CO₂e per service population per year, and, therefore, both this alternative and the 2012 Modified Project would result in a less than significant impact on GHG emissions.

Hazards and Hazardous Materials

This alternative would involve greater non-residential intensity as compared to the 2012 Modified Project. Some non-residential land uses involve use of greater amounts of hazardous materials than do residential uses. Thus, the total amount and variety of hazardous materials used in the operation of this alternative could be higher than that of the 2012 Modified Project. However, as this alternative would result in the development of the same general types of residential and non-residential uses as the 2012 Modified Project, the impact would still be less than significant. Both this alternative and the 2012 Modified Project would have less than significant impacts related to the routine transport, use, or disposal of hazardous materials. The potential impacts of this alternative and the 2012 Modified Project related to potential release of hazardous materials into the environment would be mitigated to a less than significant level through implementation of the 2011 Approved Project PPPs 4-2, 4-4, 4-5 4-6, 4-7, 4-8 (which are the same as the PPPs 5-2, 5-4, 5-5 5-6, 5-7, 5-8 in this DSSEIR, just renumbered) and Mitigation Measures HH1, HH5, and HH6. Existing regulatory requirements pertaining to the handling, storage, use, transportation and disposal of these materials apply to both the 2012 Modified Project and this alternative, and significant health and safety impacts are not expected to occur under this alternative or the 2012 Modified Project.

This alternative's and the 2012 Modified Project's potential impacts related to potential release of hazardous materials within one-quarter mile of an existing or proposed school would be less than significant level due to the 2011 Approved Project PPPs 4-2, 4-4, 4-5 4-6, 4-7, 4-8 (which are the same as the PPPs 5-2, 5-4, 5-5 5-6, 5-7, 5-8 in this DSSEIR, just renumbered) and Mitigation Measures HH-1 and HH-5, and, therefore, both would have less than significant impacts. Since the Proposed Project Site is not located within two miles of a public airport, or within or near any private airstrip or airport, neither this alternative nor the 2012 Modified Project would have any impact related to such a safety hazard.

As described in the 2011 Certified EIR, the 2011 Approved Project would not interfere or conflict with any emergency response plans; as described in Section 5.5, *Hazards and Hazardous Materials*, of this DSSEIR, the 2012 Modified Project also would not interfere or conflict with any emergency response plans. Therefore, both this alternative and the 2012 Modified Project would have a less than significant impact on emergency response plans.

Like the 2012 Modified Project, this alternative would also cause portions of Existing PA 51 containing existing structures to be developed, resulting in the need to demolish existing structures that may contain

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asbestos containing materials and/or lead-based paint. Like the 2012 Modified Project, development under this alternative would occur in areas containing remediation sites. However, as with the 2012 Modified Project, demolition and development activities under this alternative would be required to adhere to the already-imposed mitigation measures from the 2011 Certified EIR and associated MMRP and the applicable PPPs, as well as Navy-imposed use restrictions, outlined in Section 5.5, *Hazards and Hazardous Materials*, of this DSSEIR.

The impacts associated with locating structures and population adjacent to wildland fire hazard areas under this alternative would be, like the 2012 Modified Project, less than significant with implementation of the already-imposed mitigation measures from the 2011 Certified EIR and associated MMRP and PPPs outlined in Section 5.5, *Hazards and Hazardous Materials*. Furthermore, as with the 2012 Modified Project, implementation of this alternative would not significantly interfere with an adopted emergency response plan or emergency evacuation plan or result in an airport safety hazard for people residing or working in the project area.

Hydrology and Water Quality

Implementation of this alternative would have similar hydrology and water quality impacts to those of the 2012 Modified Project, discussed in Section 5.6, *Hydrology/Water Quality*, of this DSSEIR, all of which would be less than significant like those of the 2012 Modified Project. Under this alternative, which is the 2011 Approved Project scenario, there would be similar drainage patterns and peak flows as compared to the 2011 Modified Project.

Similar to the 2012 Modified Project, development under this alternative would be required to adhere to existing procedures governing water quality, many of which have already been met for the 2011 Approved Project, which would result in less than significant impacts. See Section 5.5., *Hydrology/Water Quality*, for the analysis of the 2011 Approved Project's compliance with regulatory requirements and the already-imposed mitigation measures from the 2011 Certified EIR and associated MMRP. In terms of water quality, this alternative would have less than significant impacts on water quality, like the 2012 Modified Project.

Current Irvine development standards and Zoning Code requirements prohibit the construction of any structure within a 100 year Flood Hazard Area. Per the Zoning Code and previously-adopted Mitigation Measure H/WQ-4 from the 2011 Certified EIR and associated MMRP, which is necessarily incorporated into both this alternative (which is the 2011 Approved Project) and the 2012 Modified Project, a Letter of Map Revision (LOMR) must be completed prior to building any structure within an area mapped on the Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The LOMR must be filed upon the completion of the design of the flood control improvements required to contain or redirect the 100-year flood hazard. This would ensure that impacts from flooding under this alternative would be similar to the 2012 Modified Project.

This alternative's proposed uses would be developed on essentially the same site as the 2012 Modified Project, and therefore for the same reasons identified for the 2012 Modified Project, it would also have less than-significant impacts resulting from exposure to flooding as a result of a levee or dam, or effects of seiche, tsunami, or mudflow.

Overall hydrology and water quality impacts of this alternative would be less than significant, like those of the 2012 Modified Project.

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Land Use and Planning

Under this alternative, development would occur throughout the Approved Project Site as currently entitled. The benefits of providing additional housing opportunities in proximity to existing and future employment centers on-site and in the vicinity of the Proposed Project Site would occur with this alternative, as with the 2012 Modified Project, but not to the same extent as provided by the 2012 Modified Project. As with the 2012 Modified Project, this alternative would also be consistent with SCAG's Regional Comprehensive Plan, Regional Transportation Plan and Compass Growth Vision and its 2012 RTP/SCS adopted in May 2012.

Since there are currently no residents living within the Approved Project Site or the Proposed Project Site, neither this alternative nor the 2012 Modified Project would physically divide an established community. No significant impacts to Natural Community Conservation Plans (NCCPs) or Habitat Conservation Plans (HCPs) were identified in the 2011 Certified EIR for the 2011 Approved Project, and none have been identified for the 2012 Modified Project (see above); therefore, neither this alternative nor the 2012 Modified Project would conflict with any such plans.

Overall, the land use impacts under this alternative would be similar to those of the 2012 Modified Project (i.e. less than significant).

Mineral Resources

As discussed in Chapter 8, *Impacts Found Not To Be Significant*, of this DSSEIR, most of the Proposed Project Site is mapped as Mineral Resource Zone 1 (MRZ-1) by the California Geological Survey, designating areas where available geologic information indicates there is little likelihood that significant mineral resources are present. The central and eastern parts of District 7 are mapped as MRZ-3, designating areas containing known or inferred mineral resources of unknown significance (CDGM 1994). Therefore, neither this alternative nor the 2012 Modified Project would cause a loss of availability of mineral resources, and no impact would occur. For these same reasons, no impact would occur relating to the loss of availability of a locally important mineral resource with either this alternative or the 2012 Modified Project.

Noise

This alternative would include the same general types of residential and non-residential development as the 2012 Modified Project. The 2011 Certified EIR concluded that the 2011 Approved Project would result in less than significant construction noise and vibration impacts on nearby off-site and on-site sensitive receptors. As discussed in Section 5.8, *Noise* of this DSSEIR, the 2012 Modified Project would also result in less than significant construction noise and vibration impacts on nearby off-site and on-site sensitive receptors, the closest of which would be located approximately 100 feet from the construction boundary. Therefore, relative to construction noise and vibration, the impacts of this alternative would be generally the same as those of the 2012 Modified Project. With implementation of the existing PPPs as described in Section 5.8, *Noise*, of this DSSEIR, potential impacts associated with construction noise and vibration would be less than significant. Therefore, the construction noise and vibration impacts associated with this alternative would be similar to those of the 2012 Modified Project (i.e. less than significant).

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The 2011 Certified EIR's noise analysis concluded that the 2011 Approved Project's traffic noise would be less than significant and considered "barely perceptible" in terms of community noise impact assessment. The only significant impact identified in that Noise Impact Analysis was to on-site sensitive receptors, and that impact was reduced to less than significant with the adopted mitigation (including, e.g., sound walls, closed window/mechanical ventilation, dual-glazed windows), as discussed below. Consequently, the 2011 Certified EIR concluded that the 2011 Approved Project would not create a substantial permanent increase in traffic-related noise levels. Similarly, as demonstrated by the noise analysis in Section 5.8, *Noise* of this DSSEIR, the 2012 Modified Project also would not result in a substantial permanent increase in traffic-related on-site or off-site noise levels.

The 2011 Certified EIR also assessed noise compatibility associated with the development of the 2011 Approved Project, by evaluating its compliance with the City of Irvine's preliminary acoustical analysis criteria for residential development (i.e., 65 dBA CNEL exterior and 45 dBA CNEL interior). Placement of certain of the noise-sensitive land uses proximate to high-volume roadways was identified as a significant impact for the 2011 Approved Project, but this impact was reduced to a less than significant level with the Mitigation Measures N-1 and N-2 that were adopted for the 2011 Approved Project. As discussed in Section 5.8, *Noise* of this DSSEIR, similar noise impacts to on-site sensitive receptors would occur under the 2012 Modified Project. However, similar measures as those recommended for the 2011 Approved Project could be required for the 2012 Modified Project in order to ensure its compliance with the City of Irvine's design standards for noise compatibility (i.e., 65 dBA CNEL) and the State's interior noise criteria (i.e., 45 dBA CNEL) as prescribed in PPP 8-2, and those measures would reduce the impact to a less than significant level. Therefore, the 2012 Modified Project would have a less than significant noise impact to on-site sensitive receptors, similar the 2011 Approved Project's less than significant impact.

Because the 2012 Modified Project and this alternative contain the same stationary noise sources (e.g., residential, commercial, cultural/institutional/education use and transportation facilities), this alternative would have less than significant noise impacts from these sources, similar to the 2012 Modified Project's impacts. Like the 2012 Modified Project, this alternative would be required to adhere to PPPs 8-1 and 8-2 and would; therefore, also result in less than significant off-site noise impacts from stationary sources.

Since the Proposed Project Site and the Approved Project Site are not located within two miles of a public airport, or within or near any private airstrip or airport, neither this alternative nor the 2012 Modified Project would expose people residing or working in the Approved Project Site or the Proposed Project Site to excessive airport-related noise levels.

Population and Housing

The 2011 Certified EIR concluded that development of the 2011 Approved Project would create 12,405 residents and 16,510 jobs and have a jobs-housing ratio of 3.37, which is the same scenario as this alternative, would be a significant impact with respect to the jobs-housing ratio. By contrast, Section 5.9, *Population and Housing*, of this DSSEIR concludes that the 2012 Modified Project would create an additional 11,324 residents (14,274 residents with the option conversion), an additional 1,062 jobs (or a decrease of 542 jobs with the optional conversion) and a jobs housing ratio of 1.85 (or 1.49 with the optional conversion). Based on those numbers, this DSSEIR concludes that the 2012 Modified Project would have a less than significant impact with respect to the jobs-housing ratio. Therefore, this alternative would have a significant and unavoidable population and housing impact, whereas the 2012 Modified Project would have a less than significant impact.

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Similar to the 2012 Modified Project, this alternative would provide a contribution to the City's achievement of its RHNA targets, but to a lesser degree than would the 2012 Modified Project.

There are no residents currently living on the Proposed Project Site or the Approved Project Site. Therefore, neither the development of this alternative nor the development of the 2012 Modified Project would displace existing housing or substantial numbers of people, requiring construction of replacement housing elsewhere.

Public Services

Under this alternative, development would occur throughout the Approved Project Site as currently entitled. Impacts associated with fire protection, law enforcement and library services would be generally the same as for the 2012 Modified Project; although the 2012 Modified Project's residential population is higher than this alternative's residential population, both scenarios' impacts would be less than significant.

The 2012 Modified Project would generate more students than would this alternative. The 2012 Modified Project development would generate students in both the IUSD and the SVUSD. Impacts to school services would be less than significant for both this alternative and the 2012 Modified Project through the provision of SB 50 fees.

Overall, impacts to public services for this alternative would be similar to those of the 2012 Modified Project (i.e., less than significant).

Recreation

Under this alternative, fewer residential units would be developed than under the 2012 Modified Project. However, as is true for both this alternative and the 2012 Modified Project, residential development would be required to comply with City's park dedication requirements, and therefore, adequate park and recreation facilities would be provided to meet the needs of the anticipated population of both scenarios. Additionally, as with the 2012 Modified Project, the open space areas and recreational uses and facilities that are slated for development as a part of the Great Park would be implemented under this alternative. However, the 2012 Modified Project advances funding for the implementation of recreational facilities for the Great Park. As with the 2012 Modified Project, this alternative would include the development of a comprehensive trail system that would not only connect the uses and areas on- and off-site, but would also provide a means of recreation. Therefore, the demand for parkland and recreational facilities would be the same under this alternative as for the 2012 Modified Project, and the impacts would be generally similar (i.e., less than significant).

Transportation and Traffic

Implementation of this alternative would develop fewer residential units than the 2012 Modified Project. However, as discussed in Section 5.11, *Transportation and Traffic*, of the 2011 SEIR and Section 5.12, *Transportation and Traffic*, of this DSSEIR, this alternative (i.e. the 2011 Approved Project), would impact fewer locations, but like the 2012 Modified Project, would still result in significant and unavoidable impacts on affected intersections and roadway segments outside the jurisdiction of the City because implementation of certain mitigation measures for those impacts would be under the control of other cities, Orange County, or Caltrans.

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Additionally, as with the 2012 Modified Project, this alternative would achieve the goals of the City's General Plan for effective non-motorized transportation (Objectives B-3 and B-4) through the provision of enhanced local street connectivity, an extensive network of walkways and bikeways, and the arrangement of land uses that would allow for access by various modes of non-motorized transportation.

The nearest airport to the Proposed Project Site and the Approved Project Site is John Wayne Airport, located six miles to the west. The 2011 Certified EIR identified no significant impacts relating to air traffic for the 2011 Approved Project, and implementation of the 2012 Modified Project on the Proposed Project Site also would not require a change in location of air traffic patterns. Therefore, no air traffic impacts would occur with either this alternative or the 2012 Modified Project.

According to the 2011 Certified EIR, the 2011 Approved Project would not increase any air traffic hazards impact due to a design feature. Like the 2011 Approved Project, the 2012 Modified Project includes proposed improvements to area roadways and new roadways within the Proposed Project Site; however, all new roadways and improvements to existing roadways would be designed and built in compliance with local, regional, and state agency requirements. Therefore, neither this alternative nor the 2012 Modified Project would create any hazards impacts due to roadway design features.

According to the 2011 Certified EIR, the 2011 Approved Project would not result in any impacts related to emergency access. As set forth in Section 5.10, *Public Services*, of this DSSEIR, adequate police and fire services are available to serve the 2012 Modified Project. Like the 2011 Approved Project, the existing and proposed roadway system in the 2012 Modified Project would provide adequate emergency access to all uses on-site and would not affect off-site emergency access. Therefore, neither this alternative nor the 2012 Modified Project would result in emergency access impacts.

Overall, the traffic and circulation impacts associated with this alternative would be similar to those of the 2012 Modified Project (i.e., significant and unavoidable).

Utilities and Service Systems

Under this alternative the utility and service demands have already been analyzed and approved as part of the 2011 Approved Project. As with the 2012 Modified Project, the appropriate infrastructure and facilities for each service under this alternative would be available and/or built and the provider of each service would be able to effectively supply the necessary utilities and service systems. Additionally, the impacts to utilities and services systems under this alternative would be, similar to the 2012 Modified Project, less than significant after implementation of the regulations, PPPs, and already-imposed 2011 Approved Project mitigation measures outlined in Section 5.12, *Utilities and Service Systems*, of this DSSEIR. Therefore, the impacts to utilities and service systems associated with this alternative would be similar to the 2012 Modified Project (i.e., less than significant).

The 2011 Approved Project's impacts relating to solid waste disposal were identified in the 2011 Certified EIR as being less than significant with implementation of Mitigation Measures SW-1 through SW-5; those Mitigation Measures were adopted for the 2011 Approved Project and are also incorporated into the 2012 Modified Project. Additionally, the 2012 Modified Project would, like the 2011 Approved Project, comply with laws and regulations governing solid waste disposal. Therefore, neither this alternative nor the 2012 Modified Project would result in impacts related to solid waste.

7. Alternatives to the Modified Project

7.4.2 Ability to Reduce Environmental Impacts

This No Project/2011 Approved Project Alternative would not avoid or substantially reduce the significance level of any of the impacts of the 2012 Modified Project discussed above, and with mitigation, this alternative would not have significant traffic impacts, and its impacts would generally be of the same level as the 2012 Modified Project's impacts. However, the mass criteria pollutant emissions for the No Project/2011 Approved Project Alternative are lower than for the 2012 Modified Project, although the mass criteria pollutant emissions of both are significant and unavoidable. Therefore, this alternative would not represent an improvement as compared to the 2012 Modified Project and, in fact, would have one significant impact that the 2012 Modified Project would not have (population and housing).

7.4.3 Ability to Achieve Project Objectives

The No Project/2011 Approved Project Alternative would achieve many of the objectives for the 2012 Modified Project. However, as specified below in Table 7-2, this alternative would not meet three of the project objectives, and would meet six of the project objectives to a lesser degree than the 2012 Modified Project.

*Table 7-2
Evaluation of the No Project/2011 Approved Project Alternative and the
2012 Modified Project Objectives*

<i>Modified Project Objective</i>	<i>Performance of Alternative</i>
Increase the amount of property within Combined PA 51 (formerly Existing PA 30 and Existing PA 51) that is zoned 8.1 Trails and Transit Oriented Development (TTOD) to provide greater flexibility in meeting City General Plan Goals	Although this alternative rezoned much of Existing PA 51 as 8.1 Trails and Transit Oriented Development (TTOD), it did not achieve the extent of the rezoning that the 2012 Modified Project would.
Advance the State's and Southern California Association of Governments' ("SCAG") policies to provide sustainable mixed-use development and to reduce trips and vehicle miles travelled in automobiles and light trucks	Although this alternative provides sustainable mixed-use development and reduced trips and vehicles miles travelled in automobiles and light trucks, it does not provide the increased density that the 2012 Modified Project does and therefore does not achieve the balance of mixed use development and the favorable jobs/housing ratio that the 2012 Modified Project does.
Help meet the City's Regional Housing Needs Assessment	Although this alternative provides housing to help meet the City's Regional Housing Needs Assessment, it does not include the greater number of residential units that are included in the 2012 Modified Project, or its higher number of affordable units.
Provide for a range of housing types in a location that is responsive to current and anticipated demands and is supportive of continued economic growth within the City	Although this alternative provides a range of housing types responsive to current and anticipated demands and is supportive of continued economic growth within the City, it does not provide the greater number of residential units that are included in the 2012 Modified Project, or its higher number of affordable units.
Convert existing non-residential intensity to residential uses through a revised land use plan in Combined PA 51, thereby providing a better balance of population and employment to increase internal trip capture and reduce vehicle miles travelled and improve the jobs/housing balance in jobs-rich	This alternative does not convert existing approved non-residential intensity to residential uses.

7. Alternatives to the Modified Project

*Table 7-2
Evaluation of the No Project/2011 Approved Project Alternative and the
2012 Modified Project Objectives*

<i>Modified Project Objective</i>	<i>Performance of Alternative</i>
Irvine.	
Combine Existing PAs 30 and 51 into a single PA, Combined PA 51, so that the 2012 Modified Project will be a cohesive development governed by a unified set of land use and development regulations	This alternative does not combine Existing PAs 30 and 51 into a single PA.
Better accommodate projected regional growth in an infill location that is adjacent to existing and planned infrastructure, urban services, transit, transportation corridors, and major employment centers	Although this alternative accommodates projected regional growth in an infill location adjacent to existing and planned infrastructure, urban services, transit, transportation corridors and major employment centers, it does not provide the greater number of residential units that are included in the 2012 Modified Project, or its higher number of affordable units, in this location adjacent to these facilities.
Provide additional market rate and affordable housing opportunities near existing employment and transportation centers, consistent with the City's General Plan Land Use and Housing Elements, SB 375 and SCAG's Regional Comprehensive Plan	Although this alternative provides market rate and affordable housing opportunities near existing employment and transportation centers, consistent with the City's General Plan Land Use and Housing Elements, SB 375 and SCAG's Regional Comprehensive Plan, it does not provide the greater number of market rate and affordable housing opportunities that are included in the 2012 Modified Project, near these facilities and therefore the 2012 Modified Project is more consistent with the City's General Plan Land Use and Housing Elements, SB 375 and SCAG's Regional Comprehensive Plan than this alternative.
Allow level of service (LOS) "E" to be considered a potentially acceptable level of service within certain high activity, mixed-use areas within the Proposed Project Site, to be consistent with other areas of the City and to promote use of alternative modes of transportation	As stated in Objective B-1 of the existing General Plan, in conjunction with individual subdivision map level traffic studies for development proposed in Existing PAs 30 and 51, a LOS "E" standard would be considered acceptable for application to intersections impacted in PAs 13, 30, 31, 32, 34, 35, and 39, subject to additional conditions. As a result, this objective is partially achieved under this alternative, but not to the same extent as it would be under the 2012 Modified Project..
Advance funding for the implementation of recreational facilities for the Great Park	This alternative would not advance funding for the implementation of recreational facilities for the Great Park.

7.5 MARINE WAY REALIGNMENT ALTERNATIVE

This alternative has been developed to provide an alternate alignment for Marine Way from Sand Canyon to Bake Parkway in an effort to reduce potential traffic associated with the 2012 Modified Project. All other components of the 2012 Modified Project would remain the same under this alternative. East of "B" Street, this alternative would shift the alignment of Marine Way easterly to create larger parcels in close proximity to the Irvine Station. The adjusted Marine Way alignment extends south from "B" Street and crosses the SCRRA right of way to connect with Barranca Parkway and Alton Parkway with a more direct bearing toward Bake Parkway.

7. Alternatives to the Modified Project

Aesthetics

Potential impacts associated with visual character would be essentially the same under this alternative as for the 2012 Modified Project, as the overall development intensity of this alternative would be the same and the only change would be to the roadway configurations. No differences in the daytime or nighttime glare impacts from these roadway changes are expected.

With regards to scenic vistas, as none are present on-site, no significant impacts would occur under this alternative.

Overall, the localized aesthetic impacts associated with this alternative would be the same as for the 2012 Modified Project, and the impacts under both scenarios would be less than significant.

Agricultural Resources

Like the 2012 Modified Project, this alternative would rezone 13 acres in District 6 currently zoned 1.1 Exclusive Agriculture to 1.4 Preservation to allow for the development of the Relocated Wildlife Corridor. The analysis included in Section 5.2, *Agricultural Resources* of this DSSEIR demonstrates that the conversion of this farmland would result in a less than significant impact on agricultural resources and would not conflict with the proposed zoning or surrounding agricultural uses.

This alternative would not create any different impacts than the 2012 Modified Project with respect to forest land, timberland, or timberland production because the development envelope is the same for this alternative and the 2012 Modified Project. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant* would also apply to this alternative.

Overall, neither this alternative nor the 2012 Modified Project would result in a significant impact on agricultural resources.

Air Quality

This alternative would develop the same number of residential units and the same amount of non-residential development as the Modified Project.

This alternative would result in approximately the same amount of disturbance, construction equipment mix and phasing as the 2012 Modified Project and the development footprint would be the same. The scale of construction effort in this alternative would also be the same as for the 2012 Modified Project. Therefore, as with the 2012 Modified Project, this alternative would result in significant construction mass criteria air pollutant emissions of VOC, NO_x, CO, PM_{2.5}, and PM₁₀. As with the 2012 Modified Project, therefore, this alternative's construction impacts would be significant and unavoidable. However, like the 2012 Modified Project, it is unlikely that this alternative would create any impacts above the localized significance thresholds (LST).

The operational emissions would be the same for this alternative as for the 2012 Modified Project. Therefore, long-term operation-related air emissions of this alternative would be essentially the same as for the 2012 Modified Project, and, therefore, these emissions would be significant and unavoidable for VOC, NO_x, CO, and PM_{2.5} (the same four criteria air pollutants as to which the 2012 Modified Project would generate significant and unavoidable operational emissions).

7. Alternatives to the Modified Project

Compared to the 2012 Modified Project, this alternative is expected to have generally the same VMT as the 2012 Modified Project, and is thus expected to be consistent with the 2007 AQMP, like the 2012 Modified Project.

Overall, construction- and operation-related air quality impacts associated with this alternative would be similar to the 2012 Modified Project; both impacts would remain significant and unavoidable. Therefore, this alternative would not reduce or avoid the 2012 Modified Project's significant air quality impacts.

Biological Resources

This alternative would not create any different impacts than the 2012 Modified Project with respect to biological resources because the alternative would cover the same types of terrain and resources as the 2012 Modified Project. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant*, of this DSSEIR would also apply to this alternative. Neither this alternative nor the 2012 Modified Project would result in a significant impact on biological resources.

Cultural Resources

This alternative would not create any different impacts than the 2012 Modified Project with respect to cultural resources because the development envelope is the same for this alternative and the 2012 Modified Project. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant* would also apply to this alternative. Neither this alternative nor the 2012 Modified Project would result in a significant impact on cultural resources.

Geology and Soils

This alternative would not create any different impacts than the 2012 Modified Project with respect to geology and soils because the development envelope is the same for this alternative and the 2012 Modified Project. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant*, of this DSSEIR would also apply to this alternative. Neither this alternative nor the 2012 Modified Project would result in a significant impact on geology and soils.

Greenhouse Gas Emissions

As discussed in Section 5.4, *Greenhouse Gas Emissions*, of this DSSEIR, the 2012 Modified Project would generate 162,406 MTons of GHG emissions per year without the optional conversion, and 164,152 MTons of CO₂e per year with the optional conversion, both of which include one-time amortized emissions from construction activities and carbon sequestration from vegetation changes. Construction emissions of this alternative would be similar to those of the 2012 Modified Project given that the only difference in this alternative is the alignment of Marine Way.

Because the amount and types of uses that would be developed under this alternative are the same as for the 2012 Modified Project, the operational area, energy, water, and waste categories would be the same for this alternative as for the 2012 Modified Project. The traffic emissions would also be generally the same, since VMT would be generally the same.

7. Alternatives to the Modified Project

Hazards and Hazardous Materials

This alternative would include the same number of residential units and the same amount of non-residential square footage as the 2012 Modified Project. Therefore, the amount of hazardous materials potentially handled and stored on-site would be the same for this alternative as for the 2012 Modified Project. Existing regulatory requirements pertaining to the handling, storage, use, transportation and disposal of these materials apply to both scenarios. This alternative would also cause portions of Combined PA 51 containing existing structures to be developed, resulting in the need to demolish existing structures that may contain ACMs and/or LBP. Development under this alternative would also occur in the same areas containing remediation sites. However, as with the 2012 Modified Project, demolition and development activities under this alternative would be required to adhere to the regulations, already-imposed mitigation measures from the 2011 Certified EIR and associated MMRP and PPPs outlined in Section 5.5, *Hazards and Hazardous Materials*, of this DSSEIR.

Wildfire hazard impacts of this alternative are expected to be the same as those of the 2012 Modified Project, namely, less than significant.

This alternative would not create any different impacts than the 2012 Modified Project with respect to the routine transport use or disposal of hazardous materials, with the potential release of hazardous materials within one-quarter mile of an existing or proposed school, or with any emergency response plans because the development envelope is the same for the this alternative and the 2012 Modified Project. Although the realignment of Marine Way may slightly change the route for emergency response plans, there would be no changes to the connectivity of the streets. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant* would also apply to this alternative. Overall, the hazards and hazardous materials impacts associated with this alternative would be the same as for the 2012 Modified Project, and impacts would be less than significant in both of these scenarios.

Hydrology and Water Quality

Drainage patterns and drainage flows in this alternative would be generally similar to those of the 2012 Modified Project. Any development at the Proposed Project Site under this alternative, as for the 2012 Modified Project, would be subject to additional review in order to ensure that the development would not result in significant hydrology impacts and would not exceed the capacity of the storm drain system. Therefore, hydrology and runoff impacts under this alternative would be the same as for the 2012 Modified Project, and like the 2012 Modified Project's impacts, would overall be less than significant.

Like the 2012 Modified Project, development under this alternative would be required to adhere to the existing procedures and regulations governing water quality, which would result in less than significant impacts. For example, prior to the issuance of precise grading permits project applicants are required to submit to the Director of Community Development for review and approval a WQMP that identifies the BMPs that will be used on the site to control predictable pollutant runoff. If necessary, treatment would be employed to remove excess pollutants from runoff during the construction and operational phases of development. Accordingly, in terms of water quality, this alternative is expected to have less than significant impacts, as is the case under the 2012 Modified Project.

Current City development standards and the City's Zoning Code prohibit the construction of any structure within a 100 year Flood Hazard Area. Per the City Zoning Code and the previously-approved Mitigation Measure H/WQ-4 from the 2011 Certified EIR and associated MMRP, which is necessarily incorporated

7. Alternatives to the Modified Project

into both this alternative and the 2012 Modified Project, a LOMR must be completed prior to building any structure within an area mapped on the Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The LOMR must be filed upon the completion of the design of the flood control improvements required to contain or redirect the 100-year flood hazard. This would ensure that impacts from flooding under this alternative would be similar to the 2012 Modified Project, and less than significant.

This alternative would be developed on the same site as the 2012 Modified Project, and therefore for the same reasons identified for the 2012 Modified Project, it would also have less than significant impacts resulting from exposure to flooding as a result of a levee or dam, or effects of seiche, tsunami, or mudflow.

For the reasons explained above, overall hydrology and water quality impacts of this alternative would be the same for this alternative than for the 2012 Modified Project, and both this alternative and the 2012 Modified Project would have less than significant impacts.

Land Use and Planning

As noted above, this alternative has been developed to provide an alternate alignment for Marine Way from Sand Canyon to Bake Parkway in an effort to reduce potential traffic impacts associated with the 2012 Modified Project. All other components of the 2012 Modified Project would remain the same under this alternative. East of "B" Street, this alternative would shift the alignment of Marine Way easterly to create larger parcels in close proximity to the Irvine Station. The adjusted Marine Way alignment extends south from "B" Street and crosses the SCRRA right of way to connect with Barranca Parkway and Alton Parkway with a more direct bearing toward Bake Parkway.

This alternative would require the same General Plan amendment and Zone Change as the 2012 Modified Project.

This alternative would not create any different impacts than the 2012 Modified Project with respect to the physical division of an existing community because the development envelope is the same for this alternative and the 2012 Modified Project. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant* would also apply to this alternative.

Overall, the land use impacts under this alternative would be similar as compared to the 2012 Modified Project, and the impacts of both this alternative and the 2012 Modified Project would be less than significant.

Mineral Resources

This alternative would not create any different impacts than the 2012 Modified Project with respect to mineral resources because the development envelope is the same for this alternative and the 2012 Modified Project. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant* would also apply to this alternative. Neither this alternative nor the 2012 Modified Project would result in a significant impact on mineral resources.

7. Alternatives to the Modified Project

Noise

As discussed in Section 5.8, *Noise*, of this DSSEIR, the 2012 Modified Project would result in less than significant construction noise and vibration impacts on nearby off-site and on-site sensitive receptors, the closest of which would be located approximately 100 feet from the construction boundary. Construction noise and vibration impacts of this alternative would be generally the same as for the 2012 Modified Project, since the construction equipment and techniques would be similar; therefore, construction noise and vibration impacts of this alternative are expected to be less than significant, like those of the 2012 Modified Project.

As is also discussed in Section 5.8, *Noise*, of this DSSEIR, the 2012 Modified Project would result in less than significant operational noise impacts from mobile and stationary sources. Operational impacts of this alternative would be the same as for the 2012 Modified Project; therefore, operational noise impacts of this alternative are expected to be less than significant, like those of the 2012 Modified Project.

Since the Proposed Project Site (which would also be the site for this alternative) is not located within two miles of a public airport, or within or near any private airstrip or airport, as discussed in Chapter 8, *Impacts Found Not To Be Significant*, neither this alternative nor the 2012 Modified Project would expose people residing or working in the Proposed Project Site to excessive airport-related noise levels.

Population and Housing

Section 5.9, *Population and Housing*, of this DSSEIR concluded that development of the 2012 Modified Project would result in a less than significant impact with respect to the jobs-housing ratio. This alternative would have the same number of residential units and the same amount of non-residential development as compared to the 2012 Modified Project; therefore, it would generally create the same population and the same number of jobs onsite. The jobs-housing ratio of this alternative would be the same as for the 2012 Modified Project. Additionally, as with the 2012 Modified Project, this alternative would help the City's achievement of its RHNA targets.

This alternative would not create any different impacts than the 2012 Modified Project with respect to the displacement of existing housing or people that would require construction of replacement housing elsewhere because the development envelope is the same for this alternative and the 2012 Modified Project. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant* would also apply to this alternative.

Impacts of this alternative to population and housing in general would be the same as those of the 2012 Modified Project; in both scenarios, impacts to populations and housing would be less than significant.

Public Services

This alternative would develop the same number of residential units and the same amount of non-residential square footage as the 2012 Modified Project. Impacts of this alternative associated with fire protection and law enforcement would be the same as compared to the 2012 Modified Project, and both would be less than significant.

7. Alternatives to the Modified Project

Under this alternative, the same number of students would be generated as under the 2012 Modified Project. Any impacts to school services under either this alternative or the 2012 Modified Project would be reduced to a less than significant level through the required payment of SB 50 fees.

Overall impacts to public services would be the same for this alternative as for the 2012 Modified Project. Impacts would be less than significant in each scenario.

Recreation

This alternative would develop the same number of residential units and the same amount of non-residential square footage as the 2012 Modified Project. Thus, the population generation associated with this alternative would result in the same amount of parkland and recreation facilities needed to serve the projected population at buildout as under the 2012 Modified Project. As with the 2012 Modified Project, residential development under this alternative would be required to comply with City's park dedication requirements, and therefore, adequate park and recreation facilities would be provided to meet the needs of the anticipated population of this alternative. Additionally, as with the Modified Project, the open space areas and recreational uses and facilities that are slated for development as a part of the Great Park would be implemented under this alternative. Furthermore, as with the 2012 Modified Project, this alternative would include the development of a comprehensive trail system that would not only connect the uses and areas on- and off-site, but would also provide a means of recreation.

Therefore, impacts to parkland and recreational facilities under this alternative would be to the same as for the 2012 Modified Project (i.e., less than significant).

Transportation and Traffic

This alternative would develop the same number of residential units and the same amount of non-residential square footage as the 2012 Modified Project. Therefore, this alternative would generate the same number of trips as the 2012 Modified Project.

As discussed in Section 5.12, *Transportation and Traffic*, of this DSSEIR, traffic impacts of the 2012 Modified Project would be significant and unavoidable if implementation of certain mitigation measures that are the responsibility of jurisdictions other than the City are not implemented; traffic impacts of this alternative would also be significant and unavoidable for those same reasons.

This Marine Way Realignment Alternative would decrease the distances between arterial intersections along Barranca Parkway (between Marine Way and Alton Parkway) and Alton Parkway (between Marine Way and Barranca Parkway). These distances deviate from City guidelines for the minimum distances between signalized intersections on Primary and Major arterials.

As with the 2012 Modified Project, this alternative would achieve the goals of the City's General Plan for effective non-motorized transportation (Objectives B-3 and B-4) through the provision of enhanced local street connectivity, an extensive network of walkways and bikeways, and the arrangement of land uses for access by various modes.

This alternative would not create any different impacts than the 2012 Modified Project with respect to the air traffic because the development envelope is the same for this alternative and the 2012 Modified Project. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant* would also apply to

7. Alternatives to the Modified Project

this alternative. Neither this alternative nor the 2012 Modified Project would result in any impacts to air traffic.

This alternative would not create any different impacts than the 2012 Modified Project with respect to a roadway design feature because the development envelope is the same for this alternative and the 2012 Modified Project, and all new roadways and improvements to existing roadways would be designed and built in compliance with local, regional, and state agency requirements. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant* would also apply to this alternative. Neither this alternative nor the 2012 Modified Project would result in any impacts related to roadway design features.

This alternative would not create any different impacts than the 2012 Modified Project with respect to emergency access because the development envelope is the same for this alternative and the 2012 Modified Project. Although the alignment of Marine Way may slightly change the route for police and fire services, there would be no changes to the connectivity of the streets. Therefore, the analysis in Chapter 8, *Impacts Found Not To Be Significant* would also apply to this alternative. Neither this alternative nor the 2012 Modified Project would result in any impacts to emergency access.

Overall, trip generation would remain the same for this alternative as for the 2012 Modified Project, but larger parcels in close proximity to the Irvine Station and a more direct Marine Way alignment toward Bake Parkway would offer some traffic benefit under this alternative since a more direct alignment would allow for faster travel. However, this slight traffic benefit must be weighed against other potential traffic issues that arise with this alternative, namely the decreased distances between arterial intersections on Barranca Parkway and Alton Parkway.

Traffic impacts of this alternative would be significant and unavoidable, as would those of the 2012 Modified Project, but only if the off-site improvements under other jurisdictions are not implemented. On balance, the significant traffic impacts of the 2012 Modified Project and this alternative are essentially equivalent.

Utilities and Service Systems

This alternative would develop the same number of residential units and the same amount of non-residential square footage as the 2012 Modified Project. Thus, the residential and non-residential development associated with this alternative would result in the same demand for water, electricity, and natural gas services, and generation of wastewater and solid waste, as compared to the 2012 Modified Project. As with the 2012 Modified Project, the appropriate infrastructure and facilities for each service under this alternative would be available and/or built and the provider of each service would be able to effectively supply the necessary utilities and service systems. Furthermore, as with the 2012 Modified Project, development of this alternative would be required to adhere to the regulations, 2011 Certified EIR and associated MMRP mitigation measures, and PPPs, outlined in Section 5.13, *Utilities and Service Systems*, of this DSSEIR.

Overall, impacts to utilities and service systems would be the same for this alternative as for the 2012 Modified Project, and would be less than significant in both scenarios.

7. Alternatives to the Modified Project

7.5.2 Ability to Reduce Impacts

Overall, trip generation would remain the same for this alternative as for the 2012 Modified Project, but larger parcels in close proximity to the Irvine Station and a more direct Marine Way alignment toward Bake Parkway offer some traffic benefit under this alternative. However, this slight traffic benefit must be weighed against other potential traffic issues that arise with this alternative, namely the decreased distances between arterial intersections on Barranca Parkway and Alton Parkway. Traffic impacts of this alternative would be significant and unavoidable, as would those of the 2012 Modified Project, but only if the off-site improvements under other jurisdictions are not implemented. As described above, all other impacts of this alternative would be similar to those of the 2012 Modified Project.

7.5.3 Ability to Achieve Project Objectives

The Marine Way Realignment Alternative would achieve all of the objectives of the 2012 Modified Project and would have generally the same level of impacts as the 2012 Modified Project.

7.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the “environmentally superior alternative” when significant environmental impacts result from the 2012 Modified Project, if one exists. In cases where the “No Project” Alternative is environmentally superior to the 2012 Modified Project, an environmentally superior development alternative should be identified as well.

As discussed above, the alternatives analysis in this DSSEIR differs from a typical alternatives analysis contemplated in CEQA in that the 2011 Approved Project is the subject of a development agreement and has vested development rights. The CEQA Guidelines (Section 15126[a]) state that an EIR must address “a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. As noted the only significant and unavoidable impact of the 2012 Modified Project (aside from the traffic contingency for implementation in other jurisdictions, which cannot be remedied) is Air Quality, which primarily results from traffic. Any elimination or reduction of traffic impacts which involves reducing development below the levels approved for the 2011 Approved Project is not legally feasible because that level of development is a vested right that cannot legally be reduced.

This DSSEIR has analyzed an alternative (the Marine Way Realignment Alternative) that could potentially reduce some traffic impacts. After analyzing the Marine Way Realignment Alternative, however, the 2012 Modified Project remains the environmentally preferable choice as compared to the No Project/2011 Approved Project and the Marine Way Realignment Alternatives. As discussed above, while the Marine Way Realignment Alternative may have slight traffic benefits, it would require deviation from the City's standards for the minimized distances between signalized intersections.

An impact comparison is provided on Table 7-3 and a summary of the ability of each alternative to meet the project objectives is provided on Table 7-4.

7. Alternatives to the Modified Project

*Table 7-3
Impact Comparison
2012 Modified Project versus Project Alternatives*

<i>Environmental Impact</i>	<i>2012 Modified Project (without/ with mitigation)</i>	<i>No Project/2011 Approved Project Alternative</i>	<i>Marine Way Realignment Alternative</i>
Aesthetics	LS/LS	=	=
Agricultural Resources	LS/LS	=	=
Air Quality			
Short-Term	S/S	=	=
Long-Term	S/S	<	=
Biological Resources	LS/LS	=	=
Cultural Resources	LS/LS	=	=
Geology and Soils	LS/LS	=	=
Greenhouse Gas Emissions	LS/LS	>	=
Hazards and Hazardous Materials	LS/LS	>	=
Hydrology and Water Quality	LS/LS	=	=
Land Use and Planning	LS/LS	=	=
Minerals	LS/LS	=	=
Noise			
Short-Term	LS/LS	=	=
Long-Term	LS/LS	=	=
Population and Housing	LS/LS	>	=
Public Services	LS/LS	<	=
Recreation	LS/LS	=	=
Transportation/Traffic			
Local	S/S	<	=
Regional	S/S	=	=
Utilities and Service Systems	LS/LS	<	=

LS = Less than significant.

S = Significant

< = Reduces impacts compared to the 2012 Modified Project.

> = Increases impacts compared to the 2012 Modified Project.

= Impacts would be similar.

7. Alternatives to the Modified Project

*Table 7-4
Ability of Each Alternative to Meet the 2012 Modified Project Objectives*

<i>2012 Modified Project Objective</i>	<i>2012 Modified Project</i>	<i>No Project/2011 Approved Project Alternative</i>	<i>Marine Way Realignment Alternative</i>
Implement the project objectives stated in the 2011 Certified EIR	Yes	Yes	Yes
Redevelop and reuse a portion of the former MCAS El Toro Property for a mixed-use community adjacent to the Orange County Great Park, consistent with the General Plan.	Yes	Yes	Yes
Increase the amount of property within "Combined PA 51" (formerly Existing PA 30 and Existing PA 51) that are zoned 8.1 Trails and Transit Oriented Development (TTOD) to provide greater flexibility in meeting City General Plan Goals.	Yes	Less by this alternative than by the 2012 MP	Yes
Advance the State's and Southern California Association of Governments' ("SCAG") policies to provide sustainable mixed-use development and to reduce trips and vehicle miles travelled in automobiles and light trucks.	Yes	Less by this alternative than by the 2012 MP	Yes
Help meet the City's Regional Housing Needs Assessment	Yes	Less by this alternative than by the 2012 MP	Yes
Provide for a range of housing types in a location that is responsive to current and anticipated demands and is supportive of continued economic growth within the City.	Yes	Less by this alternative than by the 2012 MP	Yes
Convert existing non-residential intensity to residential uses through a revised land use plan in Combined PA 51, thereby providing a better balance of population and employment to increase internal trip capture and reduce vehicle miles travelled and improve the jobs/housing balance in jobs-rich Irvine.	Yes	No	Yes
Establish a revised land use plan in Combined PA 51 to create a mixed-use community with neighborhood serving land uses near residences as well as employment centers.	Yes	Less by this alternative than by the 2012 MP	Yes
Combine Existing PAs 30 and 51 into a single PA, Combined PA 51, so that the 2012 Modified Project will be a cohesive development governed by a unified set of land use and development regulations.	Yes	No	Yes
Better accommodate projected regional growth in an infill location that is adjacent to existing and planned infrastructure, urban services, transit, transportation corridors, and major employment centers.	Yes	Less by this alternative than by the 2012 MP	Yes
Establish a revised land use plan that permits a wide range of housing densities, types, styles, prices, and tenancy (for sale and rental).	Yes	Yes	Yes
Create a mixed-use community that optimizes the open space and recreational opportunities in the adjacent Great Park	Yes	Yes	Yes
Provide for a fiscally sound land use plan that includes public and commercial uses to support and enhance the new residential community and other residential communities in the vicinity.	Yes	Yes	Yes
Provide additional market rate and affordable housing opportunities near existing employment and transportation centers, consistent with the City's General Plan Land Use and Housing Elements, SB 375 and SCAG's Regional Comprehensive Plan.	Yes	Less by this alternative than by the 2012 MP	Yes
Provide a safe, efficient, and aesthetically attractive street system with convenient connections to adjoining transportation routes.	Yes	Yes	Yes

7. Alternatives to the Modified Project

Table 7-4

Ability of Each Alternative to Meet the 2012 Modified Project Objectives

<i>2012 Modified Project Objective</i>	<i>2012 Modified Project</i>	<i>No Project/2011 Approved Project Alternative</i>	<i>Marine Way Realignment Alternative</i>
Allow level of service (LOS) "E" to be considered potentially an acceptable level of service within certain high activity, mixed-use areas within the Proposed Project Site, to be consistent with other areas of the City and to promote use of alternative modes of transportation.	Yes	Less by this alternative than by the 2012 MP	Yes
Provide a walkable community through the use of innovative traffic calming techniques such as roundabouts designed to slow traffic, and pedestrian pathways.	Yes	Yes	Yes
Create a highly livable, pedestrian-friendly environment that encourages alternative means of transportation to the automobile by incorporating unique site designs and enhanced pedestrian access between land uses, trails, and streets.	Yes	Yes	Yes
Create a medium-density, mixed-use community that optimizes the open space and recreational opportunities in the adjacent Orange County Great Park.	Yes	Yes	Yes
Provide new parks, trails and public open space, and complete connections to regional trails in City's General Plan Trails Map.	Yes	Yes	Yes
Advance funding for the implementation of recreational facilities for the Great Park.	Yes	No	Yes
Provide a biologically effective wildlife corridor that meets the goals of the City's General Plan, while relocating Segments 2 and 3 of the Approved Wildlife Corridor Feature in order to provide greater flexibility in developing a mixed-use community that meets City General Plan goals.	Yes	Yes	Yes

6. Significant Unavoidable Adverse Impacts

Table 1-1 in Chapter 1, *Executive Summary*, contains a summary of the impacts; Programs, Plans and Policies (“PPPs”); Project Design Features (“PDFs”); mitigation measures; and levels of significance before and after mitigation of the 2012 Modified Project. While PPPs, PDFs, and mitigation measures would reduce the significance of most of the 2012 Modified Project's impacts to less than significant levels, the following adverse impacts would remain significant and unavoidable even after feasible mitigation measures are applied:

6.1 SIGNIFICANT AND UNAVOIDABLE IMPACTS

6.1.1 Air Quality

IMPACT 5.3-2: CONSTRUCTION EMISSIONS OF THE 2012 MODIFIED PROJECT WOULD, LIKE THE 2011 APPROVED PROJECT, EXCEED SCAQMD'S EMISSIONS THRESHOLDS FOR VOC, NO_x, CO, PM₁₀, AND PM_{2.5}.

Like the 2011 Approved Project, the 2012 Modified Project would result in significant and unavoidable short-term construction air quality impacts due to emissions of VOC, NO_x, CO, PM₁₀ and PM_{2.5}. PPPs 3-1 through 3-4 and Mitigation Measures AQ-1 and AQ-2 would reduce construction emissions to the extent feasible. However, like the 2011 Approved Project, Impact 5.3-2 would remain significant and unavoidable even after mitigation.

IMPACT 5.3-3: LONG-TERM OPERATION OF THE 2012 MODIFIED PROJECT WOULD, LIKE THE 2011 APPROVED PROJECT, EXCEED SCAQMD'S EMISSIONS THRESHOLDS FOR VOC, NO_x, CO, AND PM_{2.5}.

Like the 2011 Approved Project, long-term operation of the 2012 Modified Project (with, and without optional conversion) would result in significant and unavoidable impacts due to emissions of VOC, NO_x, CO, and PM_{2.5}. PPP 3-5, PDFs 4-1, 4-2, 4-7, and 4-8, and Mitigation Measures AQ-3 through AQ-5 would reduce operational phase air quality impacts to the extent feasible. However, like the 2011 Approved Project, Impact 5.3-3 would remain significant and unavoidable even after mitigation.

6.1.2 Transportation/Traffic

IMPACT 5.12-1: TRIP GENERATION ASSOCIATED WITH THE 2012 MODIFIED PROJECT WOULD NOT IMPACT LEVELS OF SERVICE FOR THE EXISTING AREA ROADWAY SYSTEM, AS COMPARED TO THE 2011 APPROVED PROJECT.

The 2011 Certified EIR concluded that all intersections and roadway/freeway/tollway/ramp segments would operate at acceptable levels of service with the existing or planned improvements. However, the traffic analysis assumed that the cumulative impact of project traffic along with other regional growth at the identified ramp and freeway locations would be mitigated through a combination of regional programs that are the responsibility of other agencies. Therefore, the 2011 Certified EIR concluded that cumulative

6. Significant Unavoidable Adverse Impacts

freeway/tollway ramp impacts would remain significant and unavoidable if these programs are not implemented by the agencies with the responsibility to do so.

Traffic impacts of the 2012 Modified Project have been identified by analyzing the study area circulation system based on existing traffic conditions and 2015, 2030 and Post-2030 future traffic conditions. In some cases, new project impacts that were not mitigated by improvements identified in the North Irvine Transportation Mitigation (NITM) Program have been identified for project development scenarios. Recommended mitigation measures for each impacted location have also been identified. However, if there are intersections where identified improvements may not be feasible due to cost, right-of-way concerns, or community opposition, traffic impacts would remain significant and unavoidable.

Cities of Lake Forest, Laguna Woods, Mission Viejo and County of Orange Intersections and Arterial Segments

Inasmuch as the primary responsibility for approving and/or completing certain improvements located outside of Irvine lies with agencies other than the City (i.e., City of Lake Forest, Laguna Woods, Mission Viejo, Orange County, and Caltrans), there is the potential that significant impacts may not be fully mitigated if such improvements are not completed for reasons beyond the City's control (i.e., the City cannot undertake or require improvements outside of Irvine's jurisdiction). Should that occur, impacts relating to traffic generated by the 2012 Modified Project would remain significant and unavoidable.

The City adopted the NITM Program to establish a funding mechanism for the transportation improvement mitigation measures identified in the EIRs for three future development projects in north Irvine: 1) Spectrum 8/PA40, 2) Irvine Northern Sphere Area (PAs 5B, 6, 8A and 9), and 3) the Orange County Great Park. This program will contribute to the improvement of facilities within Irvine and a fair-share to improvements outside Irvine. The City acknowledges the fair-share cost of improvements to those facilities; however, the adjacent Cities have full control over implementing the identified improvements under their jurisdiction. If improvements are not completed for reasons beyond the City's control, the 2012 Modified Project's traffic impacts would remain significant and unavoidable.

Caltrans Main-Line Segments and Ramps

State highway facilities within the study area are not within the jurisdiction of the City. Rather, those improvements are planned, funded, and constructed by the State of California. OCTA's Renewed Measure M provides a potential funding source and identifies general improvements on the I-5 Freeway within the study area and were analyzed at their recommended buildout in the traffic study for the 2012 Modified Project.

The City adopted the NITM Program to establish a funding mechanism for the transportation improvement mitigation measures identified in the Environmental Impact Reports (EIRs) for three future development projects in north Irvine: 1) Spectrum 8/PA40, 2) Irvine Northern Sphere Area (PAs 5B, 6, 8A and 9), and 3) the Orange County Great Park. This program is specifically in place to contribute to the improvement of facilities within Irvine and a fair-share to improvements outside Irvine. The City acknowledges the fair-share cost of improvements to Caltrans facilities; however, Caltrans has full jurisdiction toward implementing the identified improvements under its jurisdiction.

While potential impacts to the freeway mainline segments and ramps have been evaluated, implementation of the transportation improvements to Caltrans facilities listed above is the primary

6. Significant Unavoidable Adverse Impacts

responsibility of Caltrans. While Caltrans has recognized that private development has a role to play in funding fair share improvements to impacts on the I-5, I-405, SR-133, and SR-241, Caltrans has not adopted a program that can ensure that locally-contributed impact fees will be tied to improvements to freeway mainlines and only Caltrans has jurisdiction over mainline improvements. Because Caltrans has exclusive control over state highway improvements, ensuring that developer fair share contributions to mainline improvements are actually part of a program tied to implementation of mitigation is within the jurisdiction of Caltrans. However, a number of funding programs are in place in Orange County to assist in improving and upgrading the regional transportation system. If these programs are not implemented by the agencies with the responsibility to do so, the 2012 Modified Project's freeway/tollway ramp and mainline impacts would remain significant and unavoidable.

Consequently, like the 2011 Approved Project, Impact 5.12-1 would remain **significant and unavoidable**.

6. Significant Unavoidable Adverse Impacts

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5. Environmental Analysis

5.13 UTILITIES AND SERVICE SYSTEMS

This Section of the DSSEIR addresses the potential impacts of the 2012 Modified Project as compared to the 2011 Approved Project on utilities and service systems including: water, wastewater, solid waste, electricity, natural gas, and telecommunications. The analysis in this Section is based in part on the Service Provider Correspondence contained in Appendix H of this DSSEIR. Storm drainage systems, and impacts to such systems, are discussed in Section 5.6 *Hydrology and Water Quality*, of this DSSEIR and are not discussed further in this Section.

Existing conditions information presented in this Section is based on project-specific facilities reports and coordination with affected public utility agencies. Specific references are identified as relevant. The service provider for each of the public utilities analyzed in this Section of the DSSEIR is noted parenthetically:

- Water Supply and Distribution Systems (Irvine Ranch Water District)
- Wastewater Treatment and Collection (Irvine Ranch Water District)
- Solid Waste (OC Waste & Recycling)
- Electricity (Southern California Edison)
- Natural Gas (Southern California Gas Company)
- Telecommunications (AT&T and Cox Communications Orange County, Inc.)

The analysis in this Section is based in part on the Service Provider Correspondence contained in Appendix H of this DSSEIR and on the following technical reports:

- Sewer and Water Master Plan Study Heritage Fields Project 2012 General Plan Amendment and Zone Change, RBF Consulting, June 6, 2012.
- Planning Areas 30 & 51 Great Park/Great Park Neighborhoods Sub-Area Master Plan (2011 SAMP) Update, Irvine Ranch Water District, September 20, 2011.
- 2010 Urban Water Management Plan, Irvine Ranch Water District, June 2011.
- Water Resources Master Plan, Irvine Ranch Water District, March 2002, supplemented January, 2004.
- Regional Urban Water Management Plan, Metropolitan Water District of Southern California, November 2010.
- Water Supply Assessments for the Great Park Neighborhoods, Irvine Ranch Water District, May 2011.
- Water Supply Assessment for the Heritage Fields Project 2012 GPA/ZC, Irvine Ranch Water District, June 2012.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

- Integrated Water Resources Plan 2010 Update, Metropolitan Water District of Southern California, 2010.
- Orange County Water District, Water Master Plan Report, April 1999.

Complete copies of the Sewer and Water Master Plan Study, the 2011 SAMP Update and the Water Supply Assessment are included in Appendices J, K and L, respectively.

5.13.1 Water Services

5.13.1.1 Environmental Setting

The Irvine Ranch Water District (“IRWD”) provides potable and non-potable water service to the Proposed Project Site. IRWD is a multiservice agency that provides potable and non-potable water supply and wastewater collection, treatment, and disposal services to a population of approximately 266,000, within an area covering 84,610 acres (132 square miles). IRWD’s service area encompasses Irvine; parts of unincorporated Orange County north and south of Irvine; parts of the Cities of Orange, Tustin, Santa Ana, and Costa Mesa west of Irvine; part of the City of Newport Beach south of Irvine; and part of the City of Lake Forest east of Irvine. IRWD is a member agency of the Orange County Water District (“OCWD”), and is the largest constituent agency of the Municipal Water District of Orange County (“MWDOC”) (IRWD 2005). MWDOC in turn, is a member agency of the Metropolitan Water District of Southern California (“MWD”), a consortium of 26 cities and water districts that supplies 19 million people with water including water from the State Water Project (“SWP”).

IRWD prepares two planning documents to guide water supply decision making. IRWD’s principal planning document is its Water Resources Master Plan (“WRMP”), which is a comprehensive document compiling data and analyses that IRWD considers necessary for its planning needs. IRWD’s most recent WRMP is dated March 2002, and was supplemented in January 2004. IRWD also prepares an Urban Water Management Plan (“UWMP”), a document required by state statute. The UWMP is based on the WRMP, but contains defined elements that are required by Water Code section 10631 *et seq.*, and, as a result, is more limited than the WRMP in the treatment of supply and demand issues. Therefore, IRWD primarily relies on its most recent WRMP. The UWMP is required to be updated in years ending with “five” and “zero,” and IRWD’s most recent update to that document was adopted in June 2011.

Water Supply

Water available to IRWD comes from groundwater pumped from the Orange County groundwater basin (including the Irvine Subbasin); captured local (native) surface water; recycled wastewater, and supplemental imported water supplied by MWD through the MWDOC. The supply-demand comparisons in this section are broken down among the various sources, and are further separated into potable and nonpotable water.

For comparison with demands, water supplies are classified as “currently available” or “under development.”

- Currently available supplies are those presently operational and those that will be operational within the next several years. Supplies expected to be operational in the next several years are those that have completed or substantially completed the environmental and regulatory review

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process and have the necessary contracts (if any) in place to move forward. These supplies are in various stages of planning, design, or construction.

- In general, supplies under development may necessitate the preparation and completion of environmental documents, regulatory approvals, and/or contracts prior to full construction and implementation.

A list of the currently available and under development supplies of both potable and nonpotable water can be found in the Water Supply Assessment (“WSA”) prepared for the 2012 Modified Project (Appendix L of this DSSEIR). The WSA has been prepared in compliance with SB 610 and SB 221 to identify adequate water supplies to serve the 2012 Modified Project. Due to the number of contracts, statutes, and other documents comprising IRWD’s written proof of entitlement to its water supplies, in lieu of attachment of such items to this DSSEIR or the WSA, they are identified by title and summarized in Section 2(b) of the WSA, Written Contracts/Proof of Entitlement. Copies of the items summarized are available for review at the City and can also be obtained from IRWD.

IRWD is also evaluating the development of additional supplies that are not included in either currently available or under development supplies for purposes of the WSA. As outlined in the WRMP, prudent water supply and financial planning dictates that development of supplies be phased over time, consistent with the growth in demand.

Table 5.13-1, below, shows IRWD’s water supply sources. IRWD does not allocate particular supplies to any project, but identifies total supplies for its service area.

Potable Water Supply

Less than 25 percent of IRWD’s domestic water is purchased from the MWD and imported from the Colorado River via the Colorado River Aqueduct and the SWP. The majority of IRWD’s imported potable water is supplied from a single source, the MWD Diemer Filtration Plant, located north of Yorba Linda. Typically, the Diemer Filtration Plant receives a blend of Colorado River water from Lake Mathews through the MWD lower feeder and SWP water through the Yorba Linda Feeder. Groundwater now makes up approximately 75 to 80 percent of IRWD’s total potable water supply depending on a series of local wells, including Dyer Road Wellfield Project and the IRWD’s Deep Aquifer Treatment System (“DATS”).

IRWD’s total existing potable water supply and demand (without the 2012 Modified Project, but with the 2011 Approved Project) are shown in Table 5.13-2. Forecasts indicate that IRWD will continue to have a surplus supply of potable water through the year 2032 under Normal-, Single Dry- and Multiple Dry-Year conditions.

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UTILITIES AND SERVICE SYSTEMS

*Table 5.13-1
IRWD's Existing Sources of Water Supply*

	<i>Max Day (cfs)</i>	<i>Avg. Annual (afy)</i>	<i>Annual by Category (afy)</i>
Current Supplies			
Potable – Imported			
East Orange County Feeder No. 2	41.4	16,652 ¹	-
Allen-McColloch Pipeline*	64.7	26,024 ¹	-
Orange County Feeder	18.0	7,240 ¹	49,916
Potable – Groundwater			
Dyer Road Wellfield	80.0	28,000 ²	-
OPA Well	1.4	1,000	-
Deep Aquifer Treatment System (DATS)	10.0	8,900 ²	-
Wells 21 and 22	6.0	6,300 ²	-
Irvine Desalter	10.6	5,640 ³	49,840
Total Potable Current Supplies	232.1	-	99,756
Nonpotable – Recycled Water			
MWRP (18 mgd)	23.9	17,340 ⁴	-
LAWRP (5.5 mgd)	8.3	5,975 ⁴	23,315
Nonpotable – Imported			
Baker Aqueduct	52.7	15,262 ⁵	-
Irvine Lake Pipeline	65.0	9,000 ⁶	24,262
Nonpotable – Groundwater			
Irvine Desalter	5.4	3,898 ⁷	3,898
Nonpotable Native			
Irvine Lake	5.5	4,000 ⁸	4,000
Total Nonpotable Current Supplies	160.8	-	55,475
Total Combined Current Supplies	392.9	-	155,231
Supplies Under Development			
Potable Supplies			
Well 106	2.2	1,300	-
Well 53	4.5	3,000	-
Future OPA Wells	8.0	5,000	-
Anaheim wellfield	10.0	6,500	-
Wells 51 and 52	9.0	5,500	-
Tustin Legacy wells	9.0	5,000	-
Total Potable Under Development Supplies	42.7	26,300	26,300
Nonpotable Supplies: Future MWRP & LAWRP Recycled	20.0	14,450¹⁰	14,450

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UTILITIES AND SERVICE SYSTEMS

*Table 5.13-1
IRWD's Existing Sources of Water Supply*

	<i>Max Day (cfs)</i>	<i>Avg. Annual (afy)</i>	<i>Annual by Category (afy)</i>
Total Under Development	105.4		40,750
Potable Supplies	274.8		126,056
Nonpotable Supplies	180.7		69,925
Total Supplies (Current and Under Development)	455.6		195,981

afy = acre feet per year

Cfs = cubic feet per second

MWRP - Michelson Water Reclamation Plant

LAWRP - Los Alisos Water Recycling Plant

* 64.7 cfs is current assigned capacity; based on increased peak flow, IRWD can purchase 10 cfs more (see WSA page A-23 (b)(1). (DSSEIR Appendix L).

¹ Based on converting maximum day capacity to average by dividing the capacity by a peaking factor of 1.8 (see Footnote 3, page 22 of the WSA).

² Contract amount - See WSA page A-25, Potable Supply-Groundwater (iii) (DSSEIR Appendix L)

³ Contract amount - See WSA page A-25, Potable Supply-Groundwater (iv) and (v) (DSSEIR Appendix L). Maximum day well capacity is compatible with contract amount.

⁴ MWRP 18 mgd treatment capacity (17,400 afy RW production) and LAWRP 5.5 mgd tertiary treatment capacity (5,975 afy).

⁵ Based on converting maximum day capacity to average by dividing the capacity by a peaking factor of 2.5.

⁶ Based on IRWD's proportion of Irvine Lake imported water storage; Actual ILP capacity would allow the use of additional imported water from MWD through the Santiago Lateral. MWD is the source of this water.

⁷ Contract amount - See WSA page A-29, Nonpotable Supply-Groundwater (i) and (ii). (DSSEIR Appendix L). Maximum day well capacity (cfs) is compatible with contract amount.

⁸ Based on 70 years historical average of Santiago Creek Inflow into Irvine Lake.

⁹ Estimated combined capacity of wells.

¹⁰ Future estimated MWRP and LAWRP recycled water production.

Nonpotable Water Supply

Recycled water, groundwater, and imported water account for IRWD's nonpotable water supply. IRWD's total existing nonpotable water supply and demand (without the 2012 Modified Project, but with the 2011 Approved Project) are shown in Table 5.13-3. The source of IRWD's groundwater supply is the Lower Santa Ana River Basin. IRWD is an operator of groundwater producing facilities in the Orange County Groundwater Basin.

Forecasts indicate that IRWD will continue to have a surplus supply of nonpotable water through the year 2032 under Normal-, Single Dry- and Multiple Dry-Year conditions.

Reliability of Long-Term Water Supply

Southern California faces the challenge of satisfying its water requirements and securing its firm water supplies. Increased environmental regulations and the collaborative competition for water from outside the region have resulted in reduced supplies of imported water. Continued population and economic growth correspond to increased water demands in the region, putting an even larger burden on local supplies. A number of significant areas affecting the uncertainty for delivery reliability are discussed below. Major sources of uncertainty include Delta pumping restrictions, organism decline, climate change and sea level rise, and levee vulnerability to floods and earthquakes.

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On March 29, 2011, Governor Jerry Brown ended the state of emergency declared by former Gov. Arnold Schwarzenegger in February 2009 after three relatively dry winters. Former Governor Schwarzenegger had declared a statewide drought in June 2008. The announcement from Governor Brown came after the California Department of Water Resources reported that the water content in the statewide snowpack was 165 percent of average for that time of year. The snowpack was also slightly above average in 2010. The snowpack in 2011 was 174 percent of normal in the north, 163 percent in the central Sierra and 158 percent in the southern part of the range. Sierra snow provides one third of California's water.

Table 5.13-2
IRWD Existing Supply and Demand for Potable Water
(afy)

<i>Source</i>	<i>2012</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2032</i>
Normal Year					
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF)	41,929	41,929	41,929	41,929	41,929
DRWF/DATS/OPA	37,900	37,900	37,900	37,900	37,900
Irvine Desalter	5,640	5,640	5,640	5,640	5,640
Wells 21 and 22	-	6,300	6,300	6,300	6,300
Supplies Under Development					
Future Groundwater	-	9,300	15,800	26,300	26,300
Maximum Supply Capability	85,469	101,069	107,569	118,069	118,069
Baseline Demand	60,992	64,220	69,563	75,505	81,667
Reserve Supply	24,477	36,849	38,006	42,564	36,402
Single Dry – Year					
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF)	41,929	41,929	41,929	41,929	41,929
DRWF/DATS/OPA	37,900	37,900	37,900	37,900	37,900
Irvine Desalter	5,640	5,640	5,640	5,640	5,640
Wells 21 and 22	-	6,300	6,300	6,300	6,300
Supplies Under Development					
Future Groundwater	-	9,300	15,800	26,300	26,300
Maximum Supply Capability	85,469	101,069	107,569	118,069	118,069
Baseline Demand	65,262	68,716	74,432	80,791	87,384
Reserve Supply	20,207	32,353	33,137	37,278	30,685
Multiple Dry – Year					
Current Potable Supplies					
MWD Imported (EOCF#2, AMP, OCF)	41,929	41,929	41,929	41,929	41,929
DRWF/DATS	37,900	37,900	37,900	37,900	37,900
Irvine Desalter	5,640	5,640	5,640	5,640	5,640
Wells 21 and 22	-	6,300	6,300	6,300	6,300
Supplies Under Development					
Future Groundwater	-	9,300	15,800	26,300	26,300
Maximum Supply Capability	85,469	101,069	107,569	118,069	118,069
Baseline Demand	65,262	68,716	74,432	80,791	87,384
Reserve Supply	20,207	32,353	33,137	37,278	30,685

Source: IRWD 2012

afy = acre feet per year

A full discussion of current and under-development water supply entitlements, water rights, and water service contracts can be found in the WSA (Appendix L to this DSSEIR).

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Table 5.13-3
IRWD Existing Supply and Demand for Nonpotable Water
(afy)

Source	2012	2015	2020	2025	2032
Normal – Year					
Current Nonpotable Supplies					
Existing MWRP and LAWRP	18,657	18,657	18,657	18,657	18,657
MWD Imported (Baker, ILP)	20,380	20,380	20,380	20,380	20,380
Irvine Desalter	3,898	3,898	3,898	3,898	3,898
Native Water	4,000	4,000	4,000	4,000	4,000
Supplies Under Development					
Future MWRP and LAWRP	10,100	10,100	10,100	10,100	10,100
Maximum Supply Capability	57,035	57,035	57,035	57,035	57,035
Baseline Demand	28,985	28,779	30,169	31,157	30,296
Reserve Supply	28,050	28,256	26,866	25,878	26,739
Single Dry – Year					
Current Nonpotable Supplies					
Existing MWRP and LAWRP	18,657	18,657	18,657	18,657	18,657
MWD Imported (Baker, ILP)	20,380	20,380	20,380	20,380	20,380
Irvine Desalter	3,898	3,898	3,898	3,898	3,898
Native Water	1,000	1,000	1,000	1,000	1,000
Supplies Under Development					
Future MWRP and LAWRP	10,100	10,100	10,100	10,100	10,100
Maximum Supply Capability	54,035	54,035	54,035	54,035	54,035
Baseline Demand	31,014	30,794	32,281	33,338	32,417
Reserve Supply	23,021	23,241	21,754	20,697	21,618
Multiple Dry – Year					
Current Nonpotable Supplies					
Existing MWRP and LAWRP	18,657	18,657	18,657	18,657	18,657
MWD Imported (Baker, ILP)	20,380	20,380	20,380	20,380	20,380
Irvine Desalter	3,898	3,898	3,898	3,898	3,898
Native Water	1,000	1,000	1,000	1,000	1,000
Supplies Under Development					
Future MWRP and LAWRP	10,100	10,100	10,100	10,100	10,100
Maximum Supply Capability	54,035	54,035	54,035	54,035	54,035
Baseline Demand	31,014	30,794	32,281	33,338	32,417
Reserve Supply	15,157	21,754	18,514	20,697	21,618

Source: IRWD 2012

afy = acre feet per year

A full discussion of current and under-development water supply entitlements, water rights, and water service contracts can be found in the WSA (Appendix L to this DSSEIR).

The reliability of the IRWD's water supply currently depends on the reliability of both groundwater and imported water supplies, which are managed and delivered by the OCWD and MWD, respectively.

Metropolitan Water District of Southern California

MWD has a 5,200-square-mile service area and imports about half of the water used in southern California. The other half of the water comes from local surface and groundwater supplies, recycled water, and water imported from the Owens Valley by the City of Los Angeles. Urban water demands use approximately 20% of California's developed water supply, and agricultural uses consume approximately

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80%. MWD imports water from the Colorado River and, through a contract with the State of California, from northern California via the SWP. The SWP, MWD's Colorado River Aqueduct, and MWD's local water facilities and programs have many layers that provide reliability. The SWP includes the very large San Luis Reservoir, near the City of Los Banos in Central California, and, closer to southern California, Pyramid and Castaic Lakes on the west branch, and Silverwood Lake and Lake Perris on the east branch of the SWP. MWD, in turn, has over one million acre-feet of surface water storage in southern California, including the new Diamond Valley Reservoir, in addition to large groundwater storage projects.

MWD Long-Term and Reliability Planning

MWD's framework for regional water resource planning for southern California is the Integrated Water Resources Plan ("IRP"). The IRP is a long-term water resource strategy for the six-county area served by MWD, which covers parts of Ventura, Los Angeles, Riverside, San Bernardino, Orange, and San Diego Counties. The IRP was first adopted in 1996 and was last updated in 2010. It sets regional goals for the development of MWD's various water resources and calls for investments in water conservation, recycling, groundwater treatment, storage and transfers. In return, the IRP brings supply diversity and stability. The 2010 IRP Update showed that southern California water demand continued to exceed projections laid out in the original IRP approved in 1996. The 2010 IRP Update also recommended development of a supply buffer of 200,000 acre-feet, half of which would come from local resources, and the other half through water transfers and storage programs outside MWD's service area. This supply buffer allows MWD and its member agencies to manage the uncertainties and unreliability of supply and demand. As part of the approval of the 2010 IRP Update, the MWD Board directed staff to provide an annual report on the progress toward implementing the IRP targets.

The 2010 IRP Update also noted various uncertainties that may affect long-term water supply for southern California. Specifically, it expressed concerns revolving primarily around current and future SWP supplies and operations due to impacts of actions to protect endangered fisheries, and emerging challenges facing planners due to global warming and climate change. To address some of these issues, the 2010 IRP Update places an increased emphasis on regional collaboration, with goals of stabilizing MWD's traditional imported water supplies and continuing to develop additional local resources. It also advances long-term planning for potential future contingency resources, such as storm water capture and large-scale seawater desalination, in close coordination with MWD's 26 member public agencies and other utilities.

MWD has found that current practices of diversifying water supplies and securing supply reserves allow MWD and its member agencies to adjust to changes in demands and supplies and to maintain a high degree of reliability. Planned water supply sources include resource improvement strategies and additions currently under development by MWD. Based on MWD's Findings and Conclusions as stated in the MWD 2010 IRP Update, MWD's reliability goal that full-service demands at the retail level will be satisfied for all foreseeable hydrologic conditions remains unchanged in the 2010 IRP Update, and MWD plans to accomplish this through its core resources strategies.

The 2010 IRP Update emphasizes an evolving approach and suite of actions to address the water supply challenges that are posed by uncertain weather patterns, regulatory and environmental restrictions, water quality impacts and changes in the state and the region. The three components of MWD's Adaptive Resource Management Strategy, which forms the basis for the 2010 IRP Update, include: Core Resources Strategy, Supply Buffer Implementation and Foundational Actions. The 2010 IRP Update expands the concept of developing a planning buffer from the 2004 IRP Update by implementing a supply buffer equal to 10 percent of the total retail demand. MWD will collaborate with the member agencies to

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implement this buffer through complying with Senate Bill 7 (“SB 7”) which calls for the state to reduce per capita water use by 20 percent by the year 2020.

Recent Actions on Delta Pumping

The Sacramento/San Joaquin Delta (“Delta”) is a vulnerable component of both the State and federal systems that convey water from portions of northern California to areas south of the Delta. Issues associated with the Delta have generally been known for years; however, most recently, the continuing decline in the number of endangered Delta smelt has resulted in litigation challenging permits for the pumping of water from the Delta area. On August 31, 2007, a federal court put in place interim measures to protect the endangered Delta smelt, including limitations Delta pumping. Those imitations have affected SWP operations and water supplies. On June 4, 2009, a federal biological opinion imposed rules that will further restrict water diversions from the Delta to protect endangered salmon and other endangered fish species. At present, several proceedings concerning Delta operations are ongoing to evaluate options for addressing impacts on the Delta smelt as well as other environmental concerns.

In addition to the regulatory and judicial proceedings that have addressed immediate environmental concerns, the Delta Vision process and the Bay-Delta Conservation Plan process are defining long-term solutions for the Delta (MWD 2010 IRP Update). Prior to the 2007 federal court decision concerning Delta water operations, MWD's Board approved a Delta Action Plan that described short, mid and long-term conditions of the Delta, and the actions needed to mitigate potential supply shortages and to develop and implement long-term solutions. To comprehensively address the impacts of the SWP cut-back on MWD's water supply development targets, MWD brought to its Board a strategy and work plan to update the long-term IRP, which led to the adoption of the 2010 IRP Update described above. As part of the IRP Update, MWD developed a region-wide collaborative process that included a broad-based stakeholder involvement. MWD held several stakeholder forums in 2006 and 2009 and the MWD Board adopted the 2010 IRP Update on October 12, 2010. In the 2010 IRP Update, MWD identified changes to the long-term plan and established direction to address the range of potential changes in water supply planning. The 2010 IRP Update also discusses dealing with uncertainties related to impacts of climate change (see additional discussion of this below) as well as actions to protect endangered fisheries. As discussed above, based on MWD's Findings and Conclusions as stated in the MWD 2010 IRP Update, MWD's reliability goal that full-service demands at the retail level will be satisfied for all foreseeable hydrologic conditions remains unchanged in the 2010 IRP Update, and MWD will accomplish this through its core resources strategies.

MWD Shortage Allocation Plan

On the regional level, MWD has taken a number of actions to secure a reliable water source for its member agencies. MWD adopted a water supply allocation plan (“WSAP”) for dealing with potential shortages. The plan takes into consideration the impact on retail customers and the economy, changes and losses in local supplies, the investment in and development of local resources, and conservation achievements. The possible range of a reduction in water supply is between 5 and 30 percent. Under MWD's shortage allocation approach, water would not be physically denied to an agency, but rather water obtained above an agency's allocation would be priced at a significant higher penalty rate. Development of an allocation would establish the amount of water available at the nonpenalty rate. The penalty rate is expected to be two to three times the nonpenalty rate.

In April 2011, crediting improved water reserves and the public's ongoing conservation efforts, MWD's Board of Directors voted to lift mandatory water allocation restrictions that had been in place since July 2009. The action, which became effective April 13, 2011, was made possible by 2010-2011 winter storms

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and water-saving efforts by the region's consumers and businesses. But, the improved conditions do not signal an end to long-term challenges.

Climate Change

In July 2006, the California Department of Water Resources ("DWR") released a report titled "Progress on Incorporating Climate Change into Management of California's Water Resources" which considers the impacts of climate change on the state's water supply. DWR emphasized that "the report represents an example of an impacts assessment based on four scenarios defining an expected range of potential climate change impacts." DWR's major goal is to extend the analysis for long-term water resource planning from "assessing impacts" to "assessing risk." The report presents directions for further work in incorporating climate change into the management of California's water resources. Emphasis is placed on associating probability estimates with potential climate change scenarios in order to provide policy makers with both ranges of impacts and the likelihoods associated with those impacts. DWR's report acknowledges "that all results presented in [the] report are preliminary, incorporate several assumptions, reflect a limited number of climate change scenarios, and do not address the likelihood of each scenario. Therefore, [the] results are not sufficient by themselves to make policy decisions."

In MWD's 2010 IRP Update, MWD recognizes that there is a significant uncertainty in the impact of climate change on water supply and changes in weather patterns could significantly affect water supply reliability. MWD plans to hedge against supply and environmental uncertainties by implementing a supply buffer equivalent to 10 percent of total retail demand. This buffer will be implemented through meeting SB 7 water use efficiency goals, implementing aggressive adaptive actions, developing local supplies and effecting transfers.

Per MWD's Regional Urban Water Management Plan ("RUWMP"), MWD continues to incorporate current climate change science into its planning efforts. As stated in MWD's RUWMP, the 2010 IRP Update supports the MWD Board adopted principles on climate change by: 1) supporting reasonable, economically viable and technologically feasible management strategies for reducing impacts on water supply; 2) supporting flexible "no regret" solutions that provide water supply and quality benefits while increasing the ability to manage future climate change impacts; and 3) evaluating staff recommendations regarding climate change and water resources against CEQA to avoid adverse effects on the environment. Potential climate change impacts on state, regional and local water supplies and relevant information for the Orange County hydrologic basin and Santa Ana Watershed have not been sufficiently developed at this time to permit IRWD to assess and quantify the effect of any such impact on its conclusions in the WSA prepared for the 2012 Modified Project.

Catastrophic Supply Interruption Planning

In 2005, MWD cooperated with the DWR on a preliminary study of the potential effects of extensive levee failures in the Delta. The study investigated two of a potential range of scenarios, and MWD's analysis showed that, due to its investment in local storage and water banking programs south of the Delta, MWD would be able to supply all firm requirements to its member agencies under both of the scenarios considered. However, MWD's analysis of a worst-case situation showed that MWD might need to reduce firm deliveries to its member agencies by as much as 10 percent. MWD reported this analysis in the 2005 Regional UWMP. IRWD has addressed supply interruption planning in its WRMP and UWMP.

MWD will continue to rely on the plans and policies outlined in its UWMP and IRP to address water supply shortages and interruptions (including potential shutdowns of SWP pumps) to meet water

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demands. MWD is engaged in planning processes that will identify solutions which, when combined with the rest of its supply portfolio, should ensure a reliable long-term water supply for its member agencies.

Orange County Water District

The primary source of water for the City is the Orange County Groundwater Basin. The OCWD is responsible for the protection of water rights to the Santa Ana River in Orange County, as well as for the management and replenishment of the Orange County Groundwater Basin. OCWD manages production in the basin through financial incentives and establishes the Basin Production Percentage each water year. Total water demand within OCWD's boundary for the 2009-10 water year (beginning July 1, 2009, and ending June 30, 2010) was 428,720 acre feet (af) (OCWD 2011). With implementation of OCWD's proposed projects, the Orange County Groundwater Basin yield in the year 2025 would be up to 500,000 acre feet (WSA pg. A-35). Since the formation of OCWD in 1933, OCWD has made substantial investment in facilities, basin management, and water rights protection, resulting in the elimination and prevention of adverse long-term "mining" overdraft conditions. OCWD has invested in seawater intrusion control (injection barriers), recharge facilities, laboratories, and basin monitoring to effectively manage the basin. OCWD continues to develop new replenishment supplies, recharge capacity, and basin protection measures to meet projected production from the basin during average/normal rainfall and drought periods.

OCWD's long-range plans for protecting the water supply and maintaining reliability to its member agencies include:

OCWD Long Term Facilities Plan

OCWD has prepared a draft Long Term Facilities Plan ("LTFP") to evaluate potential basin and water quality enhancement projects that may be implemented in the 20-year planning period. The LTFP includes a master list of developed and proposed projects. The various projects are grouped into five categories: 1) recharge facilities, 2) water source facilities, 3) basin management facilities, 4) water quality management facilities, and 5) operational improvements facilities. Each project is evaluated using criteria such as technical feasibility, cost, institutional support, functional feasibility, and environmental compliance. The final LTFP will include an implementation plan for the 28 recommended projects over the 20-year planning period.

OCWD Groundwater Management Plan

OCWD finalized its Groundwater Management Plan ("GMP") in March 2004, which updated prior versions from 1989 and 1990. The GMP complies with Senate Bill 1938 ("SB 1938"), passed in 2002, which includes a list of items to be included in a GMP. The GMP's objectives are 1) protecting and enhancing groundwater quality, and 2) cost-effectively protecting and increasing the basin's sustainable yield. Various programs, policies, goals, and projects are defined in the GMP to assist OCWD staff in meeting these objectives. The potential projects described in the GMP are discussed in further detail in the LTFP.

OCWD 2020 Water Master Plan Report

OCWD's Water Master Plan Report ("MPR") was prepared in April 1999 and describes local water supplies and estimates their availability extending to the year 2020. Specifically, OCWD states in its Water MPR that significant water supply sources will be available in the future for potable, nonpotable, and recharge purposes. The 1999 Water MPR discusses source waters such as imported water from

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MWD, base flows from the Santa Ana River, treated wastewater through the OCWD/Orange County Sanitation District Groundwater Replenishment System program, and possibly desalinated ocean water. The local supply availability and projections from the 1999 Water MPR have been revised and are being pursued with the LTFP.

Principles Governing CEQA Analysis of Water Supply

In *Vineyard Area Citizens for Responsible Growth, Inc., v. City of Rancho Cordova* (February 1, 2007), the California Supreme Court articulated the following principles for analysis of future water supplies for projects subject to CEQA:

- To meet CEQA's informational purposes, the EIR must present sufficient facts to decision makers to evaluate the pros and cons of supplying the necessary amount of water to the project.
- CEQA analysis for large, multiphase projects must assume that all phases of the project will eventually be built and the EIR must analyze, to the extent reasonably possible, the impacts of providing water to the entire project. Tiering cannot be used to defer water supply analysis until future phases of the project are built.
- CEQA analysis cannot rely on "paper water." The EIR must discuss why the identified water should reasonably be expected to be available. Future water supplies must be likely, rather than speculative.
- When there is some uncertainty regarding availability of future water supply, an EIR should acknowledge the degree of uncertainty, include a discussion of possible alternative sources, and identify the environmental impacts of such alternative sources. Where a full discussion still leaves some uncertainty about the long-term water supply's availability, mitigation measures for curtailing future development in the event that intended sources become unavailable may become a part of the EIR's approach.
- The EIR does not need to show that water supplies are definitely assured because such a degree of certainty would be "unworkable, as it would require water planning to far outpace land use planning." The requisite degree of certainty of a project's water supply varies with the stage of project approval. CEQA does not require large projects, at the early planning phase, to provide high degree of assurances of certainty regarding long-term future water supplies.
- The EIR analysis may rely on existing urban water management plans, so long as the project's new demand was included in the water management plan's future demand accounting.
- The ultimate question under CEQA is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project.

Water Distribution

Potable Water

A SAMP was prepared by IRWD for the Great Park in March 2009. The 2011 SAMP, which was a revision to the March 2009 SAMP, was adopted in September of 2011. The 2011 SAMP identified additional facilities required for the 2011 Approved Project.

Existing PAs 30 and 51 are located within Zone 3 North, Zone 4, and Zone 5 of the IRWD water system. The original water system for the former MCAS El Toro property was designed and built as a stand-alone system. Currently, IRWD supplies potable water to the former base through four metered connections that connect to the IRWD Zone 3 North and Zone 4 water system. The on-site existing potable water distribution system for the former MCAS El Toro property consists of a network of distribution system pipelines, six reservoirs, and two pump stations (CBA 2003).

Recycled Water

Recycled water is currently supplied to Existing PAs 30 and 51 via a 12-inch IRWD Zone B pipeline that runs perpendicular to Technology Drive and connects to an eight-inch pipeline in the southwest corner of the Proposed Project Site (CBA 2003).

Existing PAs 30 and 51 lie within three separate IRWD recycled water system pressure zones, including Zone B East Irvine, Zone C East Irvine, and Zone D AMP East. Zone B East Irvine serves elevations from 114 to 300 feet, Zone C East Irvine serves elevations from 300 to 440 feet, and Zone D AMP East serves elevations above 440 feet (CBA 2003).

5.13.1.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would have a significant effect on the environment if the project:

- U-2 Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.¹
- U-4 Would not have sufficient water supplies available to serve the project from existing entitlements and resources, and new and/or expanded entitlements would be needed.

5.13.1.3 The 2011 Approved Project

The 2011 Certified EIR analyzed impacts on water supply and the ability of IRWD to provide water to the 2011 Approved Project in accordance with SB 610 and SB 221. The 2011 Certified EIR estimated that the 2011 Approved Project would consume approximately 1.5 million gallons (1,680 AFY) of water per day, and concluded that adequate supplies were available to serve the land uses proposed at that time. Based on the findings of the water supply assessment prepared for the 2011 Approved Project, total water supplies available to IRWD during normal, single-dry and multiple-dry years within a 20-year projection would meet the water demand created by the 2011 Approved Project.

¹ Wastewater treatment facilities are addressed below.

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5.13.1.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to the 2012 Modified Project and would help to reduce and avoid potential impacts related to water services:

- PPP 13-1 **Requirement to Use Recycled Water:** Irvine Ranch Water District (IRWD) will identify areas within the Sub Area Master Plan that are capable of receiving service from the IRWD’s recycled water system, and will determine the feasibility of providing recycled water service to these areas. IRWD will also review applications for new permits to determine the feasibility of providing recycled water service to these applicants. If recycled water service is determined by IRWD to be feasible, applicants for new water service shall be required to install on-site facilities to accommodate both potable water and recycled water service in accordance with IRWD’s Rules and Regulations.
- PPP 13-2 **Connection Fees:** The Project Applicant shall enter into agreement or agreements as necessary with IRWD to establish the appropriate financial fair share costs to be borne by the project proponent. Fair share costs may include, but are not limited to, those associated with the preparation of studies necessary to analyze the needs of the 2012 Modified Project and infrastructure expansion necessary to serve the 2012 Modified Project.
- PPP 13-3 **Fire Flow Analysis:** In accordance with IRWD requirements, each tentative tract map in the 2012 Modified Project must provide a fire flow analysis. If the analysis identifies any deficiencies, the developer will be responsible for any water system improvements associated with the development project required to rectify the deficiencies and meet IRWD fire flow requirements.

Project Design Features

The following project design features (“PDFs”) have been incorporated into the 2012 Modified Project to help to reduce and avoid potential impacts related to water services and have been assumed in this section’s analysis:

- PDF 4-3 **Low-Flow Fixtures:** The 2012 Modified Project incorporates low-flow water fixtures that will meet the requirements of the California Green Building Standards Code standards. Prior to issuance of building permit, the Applicant or its successor shall submit evidence to the satisfaction of the Director of Community Development that toilets, urinals, sinks, showers, and other water fixtures installed on-site are low-flow water fixtures that meet the California Green Building Standards Code standards.
- PDF 4-4 **Landscaping and Irrigation Systems:** The 2012 Modified Project incorporates automated, high-efficiency landscaping irrigation systems on all master landscaped areas that reduce water use, such as evapotranspiration “smart” weather-based irrigation controllers, and bubbler irrigation; low-angle, low-flow spray heads; moisture sensors; and use of a California-friendly landscape palette. Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the Director of Community Development that such landscaping irrigation systems will be installed so as to make the

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2012 Modified Project consistent with the intent of the California Water Conservation in Landscaping Act of 2006 (AB 1881), including provisions to reduce the wasteful, uneconomic, inefficient, and unnecessary consumption of water.

PDF 4-5 **Use of Recycled Water on All Master Landscaped Areas:** Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the Director of Community Development and IRWD that the 2012 Modified Project incorporates the use of recycled water in all master landscaped areas, including master landscaped commercial, multifamily, common, roadways, and park areas. Master landscapes will also incorporate weather-based controllers and efficient irrigation system designs to reduce overwatering, combined with the application of a California-friendly landscape palette.

The following impact analysis addresses impacts related to water services that the Initial Study for the 2012 Modified Project disclosed as potentially significant impacts. The applicable impacts are identified in brackets after the impact statement.

IMPACT 5.13.1-1 EXISTING AND PLANNED IRWD WATER SUPPLIES AND DELIVERY SYSTEMS ARE ADEQUATE TO MEET THE 2012 MODIFIED PROJECT'S FORECASTED WATER DEMAND AS COMPARED TO THE 2011 APPROVED PROJECT. (IMPACT U-2 AND U-4)

The modifications to the 2011 Approved Project that are proposed by the 2012 Modified Project would alter the amount of water that would be demanded by the 2012 Modified Project as compared to the 2011 Approved Project, as discussed below.

Potable Water Demand

The Sewer and Water Master Plan Study prepared for the 2012 Modified Project (see Appendix J), calculated the projected water demand for the 2012 Modified Project and compared the demand to that of the 2011 Approved Project. As shown on Table 5.13-4, buildout of the 2012 Modified Project without the optional conversion would result in an average water demand of approximately 0.8 million gallon per day (mgd) (896 acre-feet per year) more than the demand created by the 2011 Approved Project. Buildout of the 2012 Modified Project with the optional conversion would result in an average water demand of approximately 1.0 mgd (1,120 acre-feet per year) more than the demand created by the 2011 Approved Project.

Although the 2012 Modified Project will increase water consumption, as compared to the 2011 Approved Project, the 2011 SAMP included a Sensitivity Analysis which considered development of up to 9,500 residential units on the Proposed Project Site. The 2011 SAMP Sensitivity Analysis estimated peak water demand under such a scenario to be 2,021 gallons per minute (gpm) (2.9 mgd). As discussed in the Sewer and Water Master Plan Study prepared for the 2012 Modified Project (see Appendix J), peak water demand is estimated to be 1,896 gpm (2.7 mgd) for the 2012 Modified Project without the optional conversion, and 2,029 gpm (2.9 mgd) for the 2012 Modified Project with optional conversion. Neither scenario is considered a noteworthy change in comparison to the demand considered in the 2011 SAMP Sensitivity Analysis. Therefore, no significant changes to the planned on-site water infrastructure are necessary to serve the 2012 Modified Project.

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Table 5.13-4
Domestic Water Demand Summary
(Average Day Demand)

	<i>2011 Approved Project</i>	<i>2011 SAMP Sensitivity Analysis</i>	<i>2012 Modified Project (without Optional Conversion)</i>	<i>2012 Modified Project (with Optional Conversion)</i>
Heritage Fields	1.8 mgd	2.8 mgd	2.6 mgd	2.8 mgd
OCGP/Public Ownership	0.1 mgd	0.1 mgd	0.1 mgd	0.1 mgd
Total	1.9 mgd	2.9 mgd	2.7 mgd	2.9 mgd

Source: RBF Consulting, 2012
mgd = million gallons per day

Non-Potable Water Demand

The Sewer and Water Master Plan Study prepared for the 2012 Modified Project (see Appendix J), calculated the projected recycled water demand for the 2012 Modified Project and compared it to that of the 2011 Approved Project. As shown in Table 5.13-5, buildout of the 2012 Modified Project with or without the optional conversion would result in an average recycled water demand of approximately 1.5 mgd (1,679 acre-feet per year) less than the demand for the 2011 Approved Project. This reduction is largely due to the already approved removal of the golf course on the Proposed Project Site.

Table 5.13-5
Recycled Water Demand Summary
(Average Day Demand)

	<i>2011 Approved Project</i>	<i>2011 SAMP Sensitivity Analysis</i>	<i>2012 Modified Project (without Optional Conversion)</i>	<i>2012 Modified Project (with Optional Conversion)</i>
Heritage Fields	2.4 mgd	0.9 mgd	0.9 mgd	0.9 mgd
OCGP/Public Ownership	1.6 mgd	1.6 mgd	1.6 mgd	1.6 mgd
Total	4.0 mgd	2.5 mgd	2.5 mgd	2.5 mgd

Source: RBF Consulting, 2012
mgd = million gallons per day

Water Supply

As Tables 5.13-6 and 5.13-7 demonstrate, there is sufficient supply capacity for both potable and nonpotable water to accommodate full buildout of the 2012 Modified Project (with or without the optional conversion) through 2032, upon completion of water supplies that are under development.

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Table 5.13-6
IRWD Buildout Supply and Demand for Potable Water
(Acre-Feet Per Year)

<i>Source</i>	<i>2012</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2032</i>
Normal-Year					
Maximum Supply Capacity ^{1,2}	85,469	101,069	107,569	118,069	118,069
Buildout Demand ^{3,4}	60,988	64,182	70,713	77,759	83,807
Reserve Supply	24,481	36,877	36,856	40,310	34,262
Single Dry-Year					
Maximum Supply Capacity ^{1,2}	85,469	101,069	107,569	118,069	118,069
Buildout Demand ^{3,4}	65,257	68,674	75,663	83,202	89,674
Reserve Supply	20,212	32,395	31,906	34,867	28,395
Multiple Dry-Year					
Maximum Supply Capacity ^{1,2}	85,469	101,069	107,569	118,069	118,069
Buildout Demand ^{3,4}	65,257	68,674	75,663	83,202	89,674
Reserve Supply	20,212	32,395	31,906	34,867	28,395

Source: IRWD WSA 2012

Notes:

¹ Includes current supplies and supplies under development.

² A full discussion of under-development water supply entitlement, water rights, and water service contracts can be found in the WSA.

³ Full WRMP buildout, including the 2012 Modified Project.

⁴ The WSA analyzed water demand for the 2012 Modified Project's based on a potential maximum number of 10,700 units.

Table 5.13-7
IRWD Buildout Supply and Demand for Nonpotable Water
(Acre-Feet Per Year)

<i>Source</i>	<i>2012</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2032</i>
Normal Year					
Maximum Supply Capacity ^{1,2}	57,035	57,035	57,035	57,035	57,035
Buildout Demand ^{3,4}	18,985	28,281	29,856	30,757	29,972
Reserve Supply	38,050	28,754	27,179	26,278	27,063
Single Dry Year					
Maximum Supply Capacity ^{1,2}	54,035	54,035	54,035	54,035	54,035
Buildout Demand ^{3,4}	31,014	30,261	31,946	32,910	32,070
Reserve Supply	23,021	23,774	22,089	21,125	21,965
Multiple Dry Year					
Maximum Supply Capacity ^{1,2}	54,035	54,035	54,035	54,035	54,035
Buildout Demand ^{3,4}	31,014	30,261	31,946	32,910	32,070
Reserve Supply	23,021	23,774	22,089	21,125	21,965

Source: IRWD WSA 2012

Notes:

¹ Includes current supplies and supplies under development.

² A full discussion of under-development water supply entitlement, water rights, and water service contracts can be found in the WSA.

³ Full WRMP buildout, including the 2012 Modified Project.

⁴ The WSA analyzed water demand for the 2012 Modified Project's based on a potential maximum number of 10,700 units.

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Supplies Under Development

In addition to currently available water supplies, there are other new sources of water supply under development by IRWD. These sources include new production facilities in the west Irvine, Anaheim, Tustin Legacy, and Tustin Ranch portions of the Orange County Groundwater Basin. The facilities, referred to in the WSA as the “Irvine Wells,” include four wells that have been drilled and have previously produced groundwater.

IRWD is also evaluating the development of additional supplies that are not included in either “currently available” or “under-development” supplies for purposes of the assessment found in the WSA. As outlined in the WRMP, prudent water supply and financial planning dictates that development of supplies be phased over time with the growth in demand. (IRWD 2012)

Water Supply Contingency Planning

IRWD considers a variety of factors when assessing its ability to meet water needs in the IRWD service area, including the possibility of supply shortfalls caused by natural disasters or delays in the completion of necessary infrastructure or water supplies. IRWD’s assessment of supply availability contains several margins of safety, including:

- The identification of “reserve” water supplies that are available to serve as a buffer against inaccuracies in demand projections, future changes in land use, or alterations in supply availability.
- The identification of nonpotable water reserves that can be treated and converted into potable water reserves.
- The use of conservative estimates for annual imported potable and nonpotable supplies.
- The ability of groundwater production to exceed applicable basin production percentages on a short-term basis, providing additional reliability during dry years or emergencies.

These strategies assist IRWD in preparing for water needs in scenarios where “under development” supplies are not completed as planned. Loss of planned water supply is also addressed through catastrophic supply interruption planning, as described below. (IRWD 2012)

Catastrophic Supply Interruption Planning

MWD has developed “Emergency Storage Requirements” (2010 RUWMP) to safeguard the region from catastrophic loss of water supply. MWD has made substantial investments in emergency storage and has based its planning on a 100% reduction in its supplies for a period of six months. The emergency plan outlines that under such a catastrophe, non-firm service deliveries would be suspended, and firm supplies would be restricted by a mandatory cutback of 25 percent from normal year demand deliveries. In addition, MWD discusses the long term Delta plan in its 2010 RUWMP. IRWD has also addressed supply interruption planning in its WRMP and UWMP. (IRWD 2012)

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Temporary MWD Allocation

The potential for federal court-ordered sanctions restricting water diversion from the Sacramento/San Joaquin Delta to result in reduced MWD water supplies to IRWD has been evaluated by IRWD. Such a scenario has been modeled by IRWD and would involve a temporary reduced allocation of water from MWD to IRWD for the years 2010 through 2035. Use of local supplies, storage, and other supply augmentation measures would mitigate shortages resulting from a temporary MWD allocation condition, and are assumed to be in use to maximum extent possible during declared shortage levels in the analysis below.

Table 5.13-8 demonstrates that, as was the case for the 2011 Approved Project, IRWD has sufficient supply capacity of potable water under a temporary MWD Allocation condition to accommodate full buildout (including the 2012 Modified Project with or without the optional conversion) through 2032, upon completion of water supplies that are under development.

Table 5.13-8
IRWD Buildout Supply and Demand for Potable Water
Under Temporary MWD Allocation Conditions
(Acre-Feet Per Year)

<i>Source</i>	<i>2012</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2032</i>
Normal Year					
Maximum Supply Capacity ^{1,2}	68,540	85,415	93,256	105,164	105,748
Buildout Demand ^{3,4}	60,988	64,182	70,713	77,759	83,807
Reserve Supply⁵	7,552	21,233	22,543	27,405	21,941
Single Dry Year					
Maximum Supply Capability ^{1,2}	68,540	86,729	94,608	106,557	108,078
Buildout Demand ^{3,4}	69,825	68,674	75,663	83,202	89,674
Reserve Supply⁵	(1,285)	18,055	18,945	23,355	18,404
Multiple Dry Year					
Maximum Supply Capability ^{1,2}	68,540	80,429	88,308	100,257	101,778
Buildout Demand ^{3,4}	69,825	68,674	75,663	83,202	89,674
Reserve Supply⁵	(1,285)	11,755	12,645	17,055	12,104

Source: IRWD WSA 2012

Notes:

¹ Includes current supplies and supplies under development.

² A full discussion of under-development water supply entitlement, water rights and water service contracts can be found in the WSA.

³ Full WRMP buildout, including the 2012 Modified Project.

⁴ The WSA analyzed water demand for the 2012 Modified Project's based on a potential maximum number of 10,700 units.

⁵ Under shortage scenarios, IRWD may need to supplement supplies with production of groundwater, which can exceed the applicable basin production percentage on a short-term basis, providing additional reliability during dry years or emergencies. In addition, if needed resultant net shortage levels can be addressed by demand reduction programs as described in IRWD's Water Shortage Contingency Plan.

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Conclusion Regarding Regulatory Uncertainties Affecting the Provision of State Water Project Supplies

There are water supply regulatory uncertainties that could significantly impact the delivery of water supplies through the coordinated operations of the SWP. As discussed above in Section 5.13.1.1, MWD, OCWD and IRWD are actively planning for water uncertainties related to the Delta smelt and global climate change issues. As discussed, there are two major state-sponsored planning efforts, the Delta Vision Task Force and the Bay Delta Conservation Plan program, that are directed toward resolving these uncertainties. Given the significance of the SWP to public health and safety, as well as to the economy of the State of California, it would appear that major uncertainties will need to be comprehensively addressed in response to the needs of the aquatic environment. At the present time, the Governor and the Legislature are considering possible bond issues that would address the regulatory uncertainties, including measures that would be directed toward improving habitat conditions for the Delta smelt. An approximately \$11.14 billion bond measure is targeted for the November 2012 ballot. Although it is not possible at this time to predict the outcome of these efforts with respect to specific levels of water supply under differing climate conditions, both cyclical and long term, the fact that 90 percent of the population of southern California lies within MWD's service area attests to the significance of planning efforts to resolve the regulatory and climate uncertainties. According to IRWD, the major water-supply planning efforts currently under way and current MWD efforts to address near-term uncertainties are, taken together, strong indicators that SWP water supply considerations will be comprehensively addressed and very likely resolved in the long term.

5.13.1.5 Cumulative Impacts

The geographic scope for cumulative water supply analysis is IRWD's service area. As described above, the total water supplies available to IRWD during MWD Allocation condition, Normal-, Single Dry-, and Multiple Dry-Year conditions within a 20-year projection will meet the projected water demand of the 2012 Modified Project and other cumulative development. IRWD supply and facilities planning is consistent with the general plans of the land use jurisdictions within IRWD's service area. Consequently, presuming future development is generally consistent with existing general plans, IRWD does not anticipate any problems supplying water to any current or reasonably foreseeable future development in the City of Irvine. Therefore, the 2012 Modified Project's demand for water services would not be cumulatively considerable.

As discussed above, IRWD's water reliability is dependent on OCWD groundwater and MWD imported water reliability. MWD will continue to rely on the plans and policies outlined in its UWMP and IRP to address water supply shortages and interruptions (including potential shut downs of SWP pumps) to meet water demands. MWD is engaged in planning processes both with its member agencies and through its involvement in the State Delta Vision and Bay Delta Conservation planning processes that are intended to identify solutions that, when combined with the rest of its supply portfolio, would ensure a reliable long-term water supply for its member agencies.

5.13.1.6 Applicable Mitigation Measures from the 2011 Certified EIR

No mitigation measures specific to impacts on potable and nonpotable water supplies and treatment were identified in the 2011 Certified EIR or associated MMRP.

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5.13.1.7 Level of Significance Before Additional Mitigation

There are adequate water supply and planned delivery systems to adequately serve the 2012 Modified Project. IRWD does not anticipate any problems supplying water to any current or reasonably foreseeable future development in Irvine. In addition, PPP 13-1 through PPP 13-3 and PDFs 4-3 through 4-5 adopted in the MMRP for the 2011 Approved Project would lessen the impact of the 2012 Modified Project on future water supply and IRWD, and impacts have been determined to be less than significant.

5.13.1.8 Additional Mitigation Measures for the 2012 Modified Project

No mitigation measures are required since the 2012 Modified Project will have a less than significant impact on potable and recycled water supplies and treatment without mitigation.

5.13.1.9 Level of Significance After Additional Mitigation

The 2012 Modified Project's impacts concerning potable and non-potable water are less than significant without mitigation. No significant impacts relating to water supply have been identified.

5.13.2 Wastewater

5.13.2.1 Environmental Setting

Wastewater Treatment

Wastewater treatment for wastewater generated from the Proposed Project Site is provided by IRWD at its Michelson Wastewater Reclamation Plant ("MWRP"; IRWD 2011). The MWRP has a capacity of 18 mgd; expansion of the MWRP to a capacity of 28 mgd is underway, with planned completion in August 2012; average wastewater flows at the MWRP are approximately 18 mgd (Busald 2011).

Wastewater Collection

The primary sewer collection system that serves Existing PAs 30 and 51 is a two-branched system with flow from the northeast to the southwest, mainly by gravity. One lift station with two pumps is located in the southwest portion of Existing PA 51 in Building 375. The existing sewer infrastructure system on Existing PAs 30 and 51 consists of a series of polyvinyl chloride ("PVC") pipes and vitrified clay pipes ("VCP") ranging in size from 6-inches to 15-inches in diameter (CBA 2003).

Sewer discharge exits Existing PAs 30 and 51 via two 12-inch lines at the southwest boundary of the Proposed Project Site into the IRWD sewer system. The two 12-inch lines cross under the Metrolink railroad tracks and connect southwest of the tracks. The flows then combine and exit via an 18-inch VCP pipe. The design capacity of this 18-inch pipe is about 1,200 gallons per minute (GPM), or 1.73 mgd. The flow continues through the IRWD Alton-Bake Parkway Trunk Sewer System to the San Diego Creek Interceptor on the north side of the San Diego (I-405) Freeway (CBA 2003).

5.13.2.2 Thresholds of Significance

Based on Appendix G to the CEQA Guidelines, the City has determined that a project would have a significant effect on the environment if the project:

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- U-2 Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- U-5 Would result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

5.13.2.3 The 2011 Approved Project

The 2011 Certified EIR concluded that IRWD has adequate wastewater treatment capacity to meet the estimated wastewater generation of the 2011 Approved Project.

The 2011 Certified EIR concluded that the 2011 Approved Project would not require construction of new or expanded wastewater treatment facilities but would require expansion of existing IRWD sewers. No significant impacts related to wastewater treatment were identified in the 2011 Certified EIR.

5.13.2.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

PPP 13-2 listed above applies to the 2012 Modified Project and would help reduce and avoid potential impacts related to wastewater services.

Project Design Features

PDF 4-3 listed above has been incorporated into the 2012 Modified Project and would help reduce and avoid potential impacts related to wastewater services.

The following impact analysis addresses impacts that the Initial Study for the 2012 Modified Project disclosed as potentially significant impacts. The applicable impacts are identified in brackets after the impact statement.

IMPACT 5.13.2-1 IRWD HAS ADEQUATE WASTEWATER TREATMENT CAPACITY TO MEET THE 2012 MODIFIED PROJECT'S ESTIMATED WASTEWATER GENERATION, AND PROJECT DEVELOPMENT WOULD NOT REQUIRE CONSTRUCTION OF NEW OR EXPANDED WASTEWATER TREATMENT FACILITIES AS COMPARED TO THE 2011 APPROVED PROJECT. (IMPACT U-2)

The modifications to the 2011 Approved Project proposed by the 2012 Modified Project would alter the amount of wastewater generated by the 2012 Modified Project as compared to the 2011 Approved Project.

Wastewater generation values were calculated for the 2012 Modified Project, including the optional conversion, and compared to the values in the 2011 SAMP calculated for the 2011 Approved Project. The values for the 2012 Modified Project were derived using the IRWD Generation Factors and Peak Flow Factors that were used as part of the 2011 SAMP. As shown below in Table 5.13-9, the 2012 Modified Project is estimated to generate a total of approximately 2.1 mgd of wastewater without the optional

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conversion and approximately 2.3 mgd of wastewater with the optional conversion. This is an increase of approximately 0.9 mgd (without optional conversion) or 1.1 mgd (with optional conversion) as compared to the 2011 Approved Project.

Table 5.13-9
Sewer Demand Summary
(Average Day Demand)

	<i>2011 Approved Project</i>	<i>2011 SAMP Sensitivity Analysis</i>	<i>2012 Modified Project (without Optional Conversion)</i>	<i>2012 Modified Project (with Optional Conversion)</i>
Heritage Fields	1.3 mgd	2.0 mgd	2.0 mgd	2.2 mgd
OCGP/Public Ownership	0.1 mgd	0.1 mgd	0.1 mgd	0.1 mgd
Total	1.4 mgd	2.1 mgd	2.1 mgd	2.3 mgd

Source: RBF Consulting, 2012
mgd = million gallons per day

As stated above, wastewater treatment for wastewater generated from the Proposed Project Site is provided by IRWD at its MWRP (IRWD 2011). The MWRP has a capacity of 18 mgd; expansion of the MWRP to a capacity of 28 mgd is underway, with planned completion in August 2012. Average wastewater flows at the MWRP are approximately 18 mgd (IRWD 2012). Since expansion of the MWRP will be completed prior to development of the 2012 Modified Project, no significant impacts are anticipated.

IRWD has adequate wastewater treatment capacity for the 2012 Modified Project's estimated wastewater generation (IRWD 2012). Therefore, development of the 2012 Modified Project would not require construction of new or expanded wastewater treatment facilities as compared to the 2011 Approved Project.

IMPACT 5.13.2-2 PROJECT DEVELOPMENT WOULD NOT REQUIRE EXPANSION AND EXTENSIONS OF EXISTING IRWD SEWERS AS COMPARED TO THE 2011 APPROVED PROJECT. (IMPACT U-5)

As described in the 2011 Certified EIR, wastewater generated by the 2011 Approved Project would generally flow to the southwest, towards the intersection of the Santa Ana Freeway (I-5) and the Eastern Transportation Corridor (SR-133). All flows will be conveyed to IRWD's off-site wastewater collection system by gravity sewer. No sewage lift stations will be required.

Although the 2012 Modified Project will increase wastewater generation, as compared to the 2011 Approved Project, the 2011 SAMP included a Sensitivity Analysis which considered up to 9,500 residential units on the Proposed Project Site. The 2011 SAMP Sensitivity Analysis estimated peak wastewater generation under such a scenario to be 1,440 gpm (2.1 mgd). As discussed in the Sewer and Water Master Plan Study prepared for the 2012 Modified Project (see Appendix J), peak wastewater generation is estimated to be 1,396 gpm (2.1 mgd) for the 2012 Modified Project without the optional conversion or 1,490 gpm (2.3 mgd) for the 2012 Modified Project with the optional conversion. Neither scenario is considered a noteworthy change in comparison to the scenario considered in the 2011 SAMP Sensitivity Analysis. Therefore, no significant changes to the planned on-site backbone sewer

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infrastructure are necessary to serve the 2012 Modified Project. Final design of local sewer lines will occur at the time individual tract maps are submitted.

5.13.2.5 Cumulative Impacts

The geographic scope for cumulative wastewater analysis is IRWD's service area. As the agency charged with providing water treatment and sewer systems within Irvine, IRWD regularly updates its WRMP and creates SAMPs in an effort to conserve water resources, ascertain changed conditions, and accurately plan for land use changes associated with the evolving Zoning Codes and General Plans of the jurisdictions within IRWD's service area. (IRWD 2011)

As discussed above, development of the 2012 Modified Project would not require additional wastewater infrastructure, including upsizing of wastewater and nonpotable water pipe segments, as compared to the 2011 Approved Project. No increase in wastewater treatment capacity would be required to serve the 2012 Modified Project. As such, like the 2011 Approved Project, the 2012 Modified Project would not result in a significant impact related to wastewater transmission or treatment capacity.

Through its SAMP, IRWD has identified areas within its jurisdiction in need of wastewater infrastructure improvements and has determined the cost of those improvements. The Applicant or its successor would be responsible for the cost of building the sewer extensions within the Proposed Project Site, as well as needed sewer expansions in and near Technology Drive south of the Proposed Project Site. The IRWD will have adequate wastewater treatment capacity to serve the 2012 Modified Project's estimated wastewater generation. Additionally, the long-range planning efforts of IRWD take into account cumulative development projects, including the 2012 Modified Project, to eliminate the potential for cumulative impacts. IRWD plans and builds wastewater treatment capacity to accommodate planned growth in its service area. The 2012 Modified Project is required to fund an analysis of 2012 Modified Project sewer requirements (completed as part of the SAMP) and to finance all sewer improvements required by the 2012 Modified Project. Other new and redevelopment projects in IRWD's service area are required to fund corresponding analyses and improvements. Therefore, as with the 2011 Approved Project, substantial cumulative impacts to wastewater treatment and wastewater conveyance are not expected, and the 2012 Modified Project's impacts on wastewater treatment and conveyance would not be cumulatively considerable.

5.13.2.6 Applicable Mitigation Measures from the 2011 Certified EIR

No mitigation measures specific to the impacts of the 2011 Approved Project on wastewater collection or treatment were recommended in the 2011 Certified EIR or associated MMRP.

5.13.2.7 Level of Significance Before Additional Mitigation

Impacts of building and operating sewer extensions were part of the impacts of the 2011 Approved Project that were analyzed in the 2011 Certified EIR. No significant sewer impacts would occur beyond those impacts identified in the 2011 Certified EIR. Therefore, potential wastewater impacts of the 2012 Modified Project have been determined to be less than significant without mitigation.

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5.13.2.8 Additional Mitigation Measures for the 2012 Modified Project

No mitigation measures are required since the 2012 Modified Project will have a less than significant impact on wastewater collection and treatment without mitigation.

5.13.2.9 Level of Significance After Additional Mitigation

The 2012 Modified Project's impacts concerning wastewater treatment and facilities are less than significant without mitigation. No significant impacts relating to wastewater treatment or collection due to the 2012 Modified Project have been identified.

5.13.3 Solid Waste

5.13.3.1 Environmental Setting

OC Waste & Recycling ("OCWR") is the government agency that regulates and operates the local Orange County landfills, including the Frank R. Bowerman Landfill which is located in the City. Waste Management of Orange County is the private contract waste hauler for all residential developments in Irvine.

OCWR operates three landfills in Orange County, which are listed below in Table 5.13-10. Table 5.13-10 also sets forth the actual average daily rate of disposal, the maximum daily permitted capacity, the remaining capacity and the estimated closure date of each of the three landfills.

*Table 5.13-10
OCWR Landfills*

<i>Landfill</i>	<i>City or Community</i>	<i>Disposal Rate, Tons per Day</i>		<i>Remaining Capacity, Cubic Yards</i>	<i>Estimated Closure Date</i>
		<i>Maximum Permitted</i>	<i>Actual</i>		
Frank R. Bowerman	Irvine	11,500	5,500	198.1 million	2053
Prima Deschecha	San Juan Capistrano	4,000	1,000	133.4 million	2067
Alpha Olinda	Brea	8,000	5,000	48.8 million	2021

Source: OCWR 2012

Assembly Bill ("AB") 939 requires that each county and city prepare a source reduction and recycling element showing how it will meet diversion of solid waste from landfills goals of 25 percent by the year 1995, and 50 percent by the year 2000 and every year after. Compliance with AB 939 is now measured in terms of actual disposal amounts per person compared to target amounts; actual disposal amounts at or below targets are in compliance with AB 939. For 2008, the most recent year for which data is available, target disposal rates for Orange County in pounds per person per day ("ppd") were 10.1 for residences and 9.3 for businesses. Actual disposal rates in Irvine were 5.7 ppd for residences and 6.6 ppd for businesses in 2010, the most recent year for which data is available (CalRecycle 2012b). Thus, the City is in compliance with AB 939 goals.

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As of 2010, there were 39 programs in place in the City for diversion of solid waste from landfills. These include programs for composting, household hazardous waste, recycling, source reduction, and special waste materials such as construction and demolition debris (CalRecycle 2012a).

5.13.3.2 *Thresholds of Significance*

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would have a significant effect on the environment if the project:

- U-6 Would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- U-7 Would not comply with federal, state, and local statutes and regulations related to solid waste.

In the Initial Study for the 2012 Modified Project, included as Appendix A to this DSSEIR, the City determined that the following impact would not be significant: U-7. The discussion in Section 8.0 *Impacts Found Not To Be Significant*, of this DSSEIR, supports the City's determination that the impact was sufficiently analyzed in the 2011 Certified EIR and that implementation of the modifications proposed by the 2012 Modified Project would not change the conclusions of the 2011 Certified EIR with respect to that impact. Therefore, Impact U-7 will not be addressed further in this Section.

5.13.3.3 *The 2011 Approved Project*

The 2011 Certified EIR concluded that the 2011 Approved Project would generate approximately 136,520 ppd or 68.26 tons per day ("tpd") of solid waste. The 2011 Certified EIR identified that solid waste reduction would be achieved through the City requirement for recycling of construction and demolition material to reduce waste, as well as through compliance with AB 939, which requires that a minimum of 50 percent of the solid waste generated in cities in California be diverted from landfills. Further, Senate Bill 1374 requires that all cities implement measures that require diversion of 75 percent of all construction and demolition waste from landfills. The 2011 Approved Project incorporated the already-adopted Mitigation Measures SW-1 through SW-5 in the MMRP for the 2011 Approved Project. While the 2011 Certified EIR identified a potential impact related to solid waste, it concluded that, with the recommended City-adopted mitigation measures, the impact would be less than significant.

5.13.3.4 *Environmental Impacts of the 2012 Modified Project*

Existing Plans, Programs, and Policies

The following City plans, programs and policies would apply to the 2012 Modified Project, and would help reduce the 2012 Modified Project's solid waste impacts:

- PPP 13-4 The City Construction and Demolition (C&D) Debris Recycling and Reuse ordinance requires that 1) all residential projects of more than one unit, 2) nonresidential developments on 5,000 square feet or larger, and 3) nonresidential demolition/renovations with more than 10,000 square feet of building recycle or reuse a minimum of 75 percent of concrete and asphalt and 50 percent of nonhazardous debris generated.

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- PPP 13-5 The City adopted a Zero Waste program in 2007 to approach waste management. The City recovers approximately 66 percent of its waste for recycling and composting, which exceeds the state's AB 939 waste diversion goals. Furthermore, waste haulers establish rate schedules according to bin size and frequency of collection. Commercial customers that subscribe to smaller bins (e.g., 2 cubic-yard bins) are routinely charged less by haulers. This pricing structure encourages waste reduction and recycling, and tends to minimize hauler pickups.
- PPP 13-6 The Irvine Sustainable Community Initiative (Initiative Ordinance 10-11), adopted by the voters of the City as Initiative Measure S on November 2, 2010, and certified by the City Council on December 14, 2010, became effective December 24, 2010. The ordinance was adopted to ratify and implement policies in support of renewable energy and environmental programs for a sustainable community. It outlines the City's direction for continuing to develop and implement programs geared towards green building, renewable energy and sustainability. For example, the City would continue to develop and implement recycling, zero waste or other innovative onsite business programs to divert waste from landfills and also continue to develop and implement the use of native, California-friendly and drought-tolerant landscaping.
- PPP 13-7 Prior to the issuance of grading permits for a project that involves the demolition of an asphalt or concrete parking lot on site, the applicant shall submit a waste management plan demonstrating compliance with the requirements of Title 6, Division 7 of the City of Irvine Municipal Code relating to recycling and diversion of demolition waste as applicable to said project. Over the course of demolition or construction, the applicant shall ensure compliance with all code requirements related to the use of City-authorized waste haulers (Standard Condition 2.24).
- PPP 13-8 Prior to the issuance of building permits for a project that involves new construction or that involves the demolition or renovation of existing buildings on site, the applicant shall comply with requirements of Title 6, Division 7 of the City of Irvine Municipal Code relating to recycling and diversion of construction and demolition waste as applicable to said project. Over the course of demolition or construction, the applicant shall ensure compliance with all code requirements related to the use of City-authorized waste haulers (Standard Condition 3.7).

Project Design Features

There are no project design features that apply to the 2012 Modified Project to help to reduce and avoid potential impacts related to solid waste disposal.

The following impact analysis addresses the impacts for which the 2012 Modified Project's Initial Study disclosed a potentially significant impact. The applicable impact is identified in brackets after the impact statement.

IMPACT 5.13-3: *THERE IS SUFFICIENT LANDFILL CAPACITY IN THE REGION FOR 2012 MODIFIED PROJECT-GENERATED SOLID WASTE AS COMPARED TO THE 2011 APPROVED PROJECT [IMPACTS U-6]*

Impact Analysis: The 2012 Modified Project incorporates the mitigation measures adopted in the MMRP for the 2011 Approved Project by the associated MMRP, including, without limitation SW1 through SW5.

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Like the 2011 Approved Project, the 2012 Modified Project's land uses would generate the typical range of recyclable and non-recyclable waste that other such uses create, including green waste (i.e., lawn and tree trimmings), cardboard, paper, glass, plastic, aluminum cans, diapers, food, and household hazardous waste (paint, motor oil, antifreeze, batteries). Solid waste disposal services for the 2012 Modified Project would be provided by Waste Management of Orange County, a private contract hauler that serves all residential developments in Irvine.

Development of the 2012 Modified Project would increase the amount of solid waste generated by the land uses at the Proposed Project Site, and would thereby increase the demand for solid waste services compared to the 2011 Approved Project. Pursuant to solid waste generation rates provided by CalRecycle, on average, residential land uses generate approximately 12.23 ppd of solid waste per household and commercial uses generate an average of 3.12 ppd of solid waste per 100 square feet, as listed in Table 5.13-11.

*Table 5.13-11
Estimated Solid Waste Generation Rates by Land Use Type*

<i>Land Use</i>	<i>Generation Factor</i>
Residential	12.23 lbs/household/day
Offices	0.084 lb/sf/day
Commercial/Retail	3.12 lbs/100 sf/day
Restaurants	0.005 lb/sf/day
Industrial/Warehouse	1.42 lb/100 sf/day
Schools	1 lb/student/day
Hotel/Motel	4 lbs/room/day
Public/Institutional	0.007 lb/sf/day

Source: CalRecycle 2011 and Arnau 2012

As shown in Table 5.13-12a, the 2012 Modified Project's 9,500 dwelling units would generate approximately 116,185 ppd (or 58.09 tpd) of solid waste, and the 4,902,200 square feet of non-residential uses would generate approximately 165,345 ppd (or 82.67 tpd) of solid waste. As shown in Table 5.13-12b, with use of the optional conversion included, the 2012 Modified Project's 10,700 dwelling units would generate approximately 130,861 ppd (or 65.43 tpd) of solid waste, and the 4,367,200 square feet of non-residential uses would generate approximately 120,422 ppd (or 60.21 tpd) of solid waste. Therefore, the 2012 Modified Project without the optional conversion would generate a total of 281,530 ppd (or 140.76 tpd) of solid waste, which is an increase of 145,010 ppd (or 72.50 tpd) from the 2011 Approved Project. With the optional conversion, the 2012 Modified Project would generate a total of 251,283 ppd (or 125.64 tpd) of solid waste, which is an increase of 114,763 ppd (or 57.38 tpd) from the 2011 Approved Project.

Solid waste from the 2012 Modified Project would be disposed of at the Frank R. Bowerman Landfill. As described above in Table 5.13-10, the average daily rate of disposal for the Frank R. Bowerman Landfill is 5,500 tpd, with a maximum daily permitted capacity of 11,500 tpd. OCWR has stated that its landfills can accommodate the solid waste generated by the 2012 Modified Project, as well as that generated by cumulative development (Arnau 2012).

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Table 5.13-12a
Estimated Solid Waste Generation at Buildout
(2012 Modified Project without Optional Conversion)

<i>Land Use</i>	<i>Units/Square Feet</i>	<i>Generation Factor</i>	<i>Amount of Solid Waste (lbs/day)</i>
Single Family Residential	3,660 (2,466 + 1,194) du	12.23 lbs/household/day	44,762
Multi-family Residential	5,840 (2,428 + 3,412) du	12.23 lbs/household/day	71,423
Medical and Science	3,364,000 sf	1.42 lb/100 sf/day	47,769
Multi-Use	1,318,000 sf	0.084 lb/sf/day	110,712
Community Commercial	220,000 sf	3.12 lbs/100 sf/day	6,864
Total	9,500 units/ 4,902,200 sf	N/A	281,530

Table 5.13-12b
Estimated Solid Waste Generation at Buildout
(2012 Modified Project with Optional Conversion)

<i>Land Use</i>	<i>Units/Square Feet</i>	<i>Generation Factor</i>	<i>Amount of Solid Waste (lbs/day)</i>
Single Family Residential	3,971 (2,466 + 1,505) du	12.23 lbs/household/day	48,565
Multi-family Residential	6,729 (2,428 + 4,301) du	12.23 lbs/household/day	82,296
Medical and Science	3,364,000 sf	1.42 lb/100 sf/day	47,769
Multi-Use	783,200 sf	0.084 lb/sf/day	65,789
Community Commercial	220,000 sf	3.12 lbs/100 sf/day	6,864
Total	10,700 units/ 4,367,200 sf	N/A	251,283

There is adequate capacity at the Frank R. Bowerman Landfill for the solid waste generated by the 2012 Modified Project as compared to the 2011 Approved Project, and implementation of the 2012 Modified Project would not require increased permitted landfill capacity either there or in any other landfill. Therefore, like the 2011 Approved Project, the 2012 Modified Project's impacts with respect to solid waste would be less than significant.

5.13.3.5 Cumulative Impacts

The 2012 Modified Project, in combination with other projects in the county, would increase demand for landfills and solid waste services in Orange County. However, the Orange County Landfill System is required to have available disposal capacity for a projected period of 15 years. The Orange County Landfill System has demonstrated this capacity and even has sufficient excess capacity to enable it to regularly import solid waste from Los Angeles County. The rate of disposal at the Frank R. Bowerman Landfill serving the Proposed Project Site is 5,500 tpd, with a maximum daily permitted capacity of 11,500 tpd, and that landfill has capacity through the year 2053. OCWR has confirmed that it can accommodate the solid waste generated by the 2012 Modified Project as well as that generated by cumulative development (OCWR 2012). Therefore, like the 2011 Approved Project, the 2012 Modified Project's impacts with respect to solid waste would not be cumulatively considerable.

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5.13.3.6 *Applicable Mitigation Measures from the 2011 Certified EIR*

Five mitigation measures for solid waste impacts were recommended in the 2011 Certified EIR and associated MMRP, were adopted in the MMRP by the City for the 2011 Approved Project, and are incorporated into the 2012 Modified Project. They include the following:

- SW-1 It is anticipated that much of the solid waste resulting from the demolition, dismantling, or other deconstruction of the aged structures and property, including but not limited to buildings and runways, at MCAS El Toro is contaminated with lead-based paints, asbestos, or other materials that may render it unsuitable for recycling or reuse. At the sole cost and expense of the project applicant, in order to evaluate this condition and determine the feasibility of recycling of solid waste material from the MCAS El Toro site by ordinary means, a technical evaluation by a qualified environmental consultant must be conducted. The technical evaluation shall include sufficient sample testing of all types of solid waste materials to be generated by the project to analyze its composition. A copy of the full technical evaluation and its findings must be submitted to the City of Irvine Community Development Department. The City of Irvine must confirm the adequacy of the technical evaluation prior to authorizing the demolition, dismantling, or deconstruction project to proceed. If it is determined by the technical evaluation that material is contaminated and prohibited from being recycled by ordinary means, a further evaluation must be conducted to identify and evaluate other feasible methods approved by state law to divert the material from landfills. This may include the delivery of the waste material to other appropriate non-disposal or transformation facilities, such as “waste-to-energy” (WTE) plants.
- SW-2 For that solid waste which is determined to be inappropriate for recycling (as that term is defined by California Public Resources Code Section 40180), the project applicant must submit a written plan to the City and implement such plan to ensure that 75% of the material, or the maximum amount feasible as determined by the technical evaluation, is diverted from the landfill through other methods that comply with state statutes and regulations.
- SW-3 For that solid waste which the technical study deems to be suitable for recycling, the project applicant must submit a written plan to the City and implement such plan to ensure that solid waste material generated by the demolition, dismantling, or deconstruction project, land use operations and maintenance is collected by a City authorized solid waste hauler or recycling agent, and that a minimum of 75% of the solid waste from the project is diverted from landfills by recycling, as that term is defined by California Public Resources Code Section 40180 (“Recycling” does not include transformation, as defined in Public Resources Code Section 40201).
- SW-4 To ensure ongoing compliance with these mitigation measures, the project applicant will be required to submit solid waste tonnage reports to the City of Irvine on City approved forms, accompanied by “weight ticket” receipts from state-certified disposal, nondisposal, or transformation facilities, on a quarterly basis to demonstrate that solid waste diversion has occurred in accordance with these required mitigation measures and in a manner that is consistent with, and not detrimental to, the efforts of the City of Irvine to comply with AB939.

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To assure compliance with applicable statutes related to the disposal of solid waste, it is necessary for the City to require appropriate and effective mitigation measures to limit the disposal and ensure significant recycling of solid waste on-site.

- SW-5 For green waste, the project applicant must submit a written plan to the City and implement such plan to ensure that the green waste material generated by landscape maintenance operations is collected by a City authorized waste hauler or recycling agent, that the maximum feasible amount of that collected green waste is recycled, and that a minimum of 50% of the green waste from the project is diverted from landfills by recycling, as that term is defined by California Public Resources Code Section 40180.

5.13.3.7 Level of Significance Before Additional Mitigation

No significant impacts relating to solid waste have been identified. All 2012 Modified Project impacts related to solid waste will be less than significant without additional mitigation beyond Mitigation Measures SW-1 through SW-5 already adopted in the MMRP for the 2011 Approved Project, and which are incorporated into the 2012 Modified Project. In addition, PPPs 13-4 through 13-8 would lessen the impact of the 2012 Modified Project on solid waste.

5.13.3.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are recommended, since the 2012 Modified Project will have a less than significant impact on solid waste as compared to the 2011 Approved Project.

5.13.3.9 Level of Significance After Additional Mitigation

No significant impacts relating to solid waste have been identified for the 2012 Modified Project.

5.13.4 Electricity, Natural Gas, and Telecommunications

5.13.4.1 Environmental Setting

Electricity

The Proposed Project Site is located within the electricity service territory of Southern California Edison ("SCE"). SCE provides electrical service to 180 cities covering over 50,000 square miles of service area and encompassing 11 counties in central and coastal Southern California. The Proposed Project Site has electricity service. SCE estimated total electricity consumption in its service area to be 100,907 gigawatt-hours (GWh) in 2008, and forecasts total consumption in its service area to be 112,964 GWh in 2020 (CEC 2009).

Natural Gas

The Proposed Project Site lies entirely within the natural gas service territory of the Southern California Gas Company ("SCGC"). SCGC's service territory encompasses approximately 23,000 square miles of central and Southern California. SCGC projected total consumption of natural gas in its service area

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would be 7,422 million therms² in 2011, and forecasts consumption to increase to 7,829 million therms by 2020 (CEC 2009). SCGC has an existing gas main located near the Proposed Project Site (Harriel 2011).

Telecommunications

AT&T provides telephone service to the Proposed Project Site. There are AT&T fiber and copper facilities on Trabuco Road extending into 'Building One' on the Proposed Project Site. There is a conduit system in Irvine Boulevard, but no feeder cable extends from Irvine Boulevard into the Proposed Project Site (Akin 2011). Cox Communications provides cable video, data, and telephone service to south Orange County, including Irvine, and has fiber-optic and coax infrastructure in and around the Proposed Project Site (Weibel 2011). AT&T and Cox Communications would serve the Proposed Project Site with communication facilities and services.

5.13.4.2 Thresholds of Significance

The City has determined that a project would have a significant effect on the environment if the project would:

- U-8 Require substantial new or expanded electricity supplies.
- U-9 Require substantial new or expanded supplies of natural gas.
- U-10 Require substantial new or expanded telecommunications infrastructure.

5.13.4.3 The 2011 Approved Project

The 2011 Certified EIR concluded that the 2011 Approved Project would generate demand for 69.5 million kilowatt-hours (kWh) of electricity per year. The 2011 Certified EIR concluded that demand for electricity service would be accommodated by SCE. It further concluded that with implementation of energy efficiency standards and the construction of new facilities by SCE as necessitated by demand for new service, SCE would be able to supply electricity to meet the demand for electricity generated by the 2011 Approved Project. The 2011 Certified EIR determined that no significant impact concerning electricity services would occur.

The 2011 Certified EIR concluded that the 2011 Approved Project would consume roughly 324 billion British thermal units (BTUs) of natural gas per year. The 2011 Certified EIR concluded that sufficient natural gas infrastructure existed to serve the 2011 Approved Project and that no significant impact concerning natural gas services would occur.

The 2011 Certified EIR concluded that impacts related to the installation of new utility infrastructure were sufficiently addressed in the environmental analysis in sections of the 2011 Certified EIR other than Section 5.12, *Utilities and Service Systems*. The 2011 Certified EIR concluded that after implementation of all mitigation measures then-proposed for the 2011 Approved Project impacts from installation of utility infrastructure for the 2011 Approved Project would be less than significant.

² One therm is the energy in approximately 97.1 cubic feet of natural gas; or 100,000 BTU.

5.13.4.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following City plans, programs and policies (“PPP”) would apply to the 2012 Modified Project, and would help reduce the 2012 Modified Project's impacts related to electricity, natural gas and telecommunications facilities and services:

- PPP 4-3 **California’s Building and Energy Efficiency Standards (CCR Title 24):** Prior to the issuance of a building permit for residential, commercial, or office structures in the Proposed Project Site, development plans for these structures shall be required to demonstrate that the project meets the Building and Energy Efficiency Standards in place at the time of building permit issuance. Commonly known as Title 24, these standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2008 standards are approximately 15 percent more energy efficient than the 2005 Building and Energy Efficiency Standards. The 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent more efficient for nonresidential construction. The 2013 Standards, which take effect on January 1, 2014, offer builders more efficient windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses. Plans submitted for building permits shall include written notes demonstrating compliance with the energy standards and shall be reviewed and approved by the Public Utilities Department prior to issuance of building permits. Design strategies to meet this standard may include maximizing solar orientation for daylighting and passive heating/cooling, installing appropriate shading devices and landscaping, utilizing natural ventilation, and installing cool roofs. Other techniques include installing insulation (high R value) and radiant heat barriers, low-e window glazing, or double-paned windows.
- PPP 4-4 **Title 24 Code Cycles: Net-Zero Buildings (Residential & Non-Residential):** The California Public Utilities Commission adopted its Long-Term Energy Efficiency Strategic Plan on September 18, 2008, presenting a roadmap for all new residential and commercial construction to achieve a zero-net energy standard. This Plan outlines the goal of reaching zero net energy in residential construction by 2020 and in commercial construction by 2030. Achieving this goal will require increased stringency in each code cycle of California’s Energy Code (Title 24).
- PPP 4-5 **California Renewable Portfolio Standard:** CARB’s Renewable Portfolio Standard (RPS) is a foundational element of the State’s emissions reduction plan. In 2002, Senate Bill 1078 established the California RPS program, requiring 20 percent renewable energy by 2017. In 2006, Senate Bill 107 advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II. On September 15, 2009, Governor Arnold Schwarzenegger signed Executive Order S-21-09 directing CARB to adopt regulations increasing RPS to 33 percent by 2020. These mandates apply directly to investor-owned utilities, which in the case of the 2012 Modified Project is Southern California Edison.

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Project Design Features

The following project design feature (“PDF”) has been incorporated into the 2012 Modified Project and is applicable here.

PDF 4-7 **Energy Star Appliances:** EnergyStar appliances (excluding refrigerators), such as dishwashers, clothes washers, clothes dryers, air conditions, furnaces, and water heaters, shall be offered or installed in all residential dwelling units.

The following impact analysis addresses impacts for which the 2012 Modified Project’s Initial Study disclosed as potentially significant impacts.

IMPACT 5.13-4: EXISTING AND/OR PROPOSED FACILITIES WOULD BE ABLE TO ACCOMMODATE 2012 MODIFIED PROJECT-GENERATED UTILITY DEMANDS AS COMPARED TO THE 2011 APPROVED PROJECT [IMPACTS U-8, U-9 AND U-10].

Impact Analysis:

Project Electricity Demand

Electricity demand at buildout for the 2012 Modified Project (with and without the optional conversion) is shown below in Table 5.13-13. Energy use from future development is based on energy generation rates available from the Database for Energy Efficient Resources (“DEER”) issued by the California Public Utilities Commission (CPUC 2008).

At buildout, the 2012 Modified Project would generate a demand for 85.12 Gwh/year of electricity without the optional conversion. With the optional conversion, the 2012 Modified Project would generate a demand for 83.04 Gwh/year of electricity at buildout. This represents an increase of 15.61 Gwh/year without the optional conversion (or 13.53 Gwh/year with the optional conversion) above the estimated demand of the 2011 Approved Project. Demand for electricity service would be accommodated by SCE (Nelson 2012). New facilities to support the demand for electric service in the 2012 Modified Project would be constructed by SCE as necessitated by the demand for new service (Nelson 2012). In addition, new structures within the Proposed Project Site would be built in accordance with the adopted 2008 Building and Energy Efficiency Standards, the 2010 Green Building Code, and the PDF listed above in Section 5.13.4.4. The 2008 Building and Energy Efficiency Standards are approximately 15 percent more energy efficient than the previous 2005 Building and Energy Efficiency Standards, and the Applicant has committed to making development under the 2012 Modified Project be 15 percent more energy efficient than the 2008 Building and Energy Efficiency Standards. SCE would be able to supply electricity to meet the demand for electricity generated by the 2012 Modified Project (Nelson 2012). Therefore, like the 2011 Approved Project, the 2012 Modified Project would not create a significant impact with respect to electricity facilities and services.

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Table 5.13-13a
Total Projected Electricity Demand at Buildout
(2012 Modified Project Without Optional Conversion)

<i>Land Use</i>	<i>Quantity</i>	<i>Electricity Generation Factor¹</i>	<i>Total Demand in kilowatt-hours per year (kwh/year)</i>	<i>Total Demand in gigawatt-hours per year (Gwh/year)²</i>
Residential				
Residential	9,500	4,333 kWh/DU	41,163,500	41.16
Non-residential				
Medical and Science	3,364,000	6.995 kWh/SF (consumption rate for R&D)	23,531,180	23.53
Multi-Use	1,318,200	13.604 kWh/SF (consumption rate for Office)	17,932,793	17.93
Community Commercial	220,000	11.329 kWh/SF (consumption rate for Retail/Auto Sales)	2,492,380	2.49
Subtotal, Non-residential	4,902,200	-	43,956,353	43.96
Total Buildout Demand			85,119,853	85.12

du = dwelling unit

¹ Source: DEER, 2008. Specific consumption rates for school uses are not available, but SCE has indicated that it would have enough electricity to serve the entirety of the 2012 Modified Project, including the proposed high school.

² 1 Gwh = 1,000,000 kwh

Table 5.13-13b
Total Projected Electricity Demand at Buildout
(2012 Modified Project With Optional Conversion)

<i>Land Use</i>	<i>Quantity</i>	<i>Electricity Generation Factor¹</i>	<i>Total Demand in kilowatt-hours per year (kwh/year)</i>	<i>Total Demand in gigawatt-hours per year (Gwh/year)²</i>
Residential				
Residential	10,700	4,333 kWh/DU	46,363,100	46.36
Non-residential				
Medical and Science	3,364,000	6.995 kWh/SF (consumption rate for R&D)	23,531,180	23.53
Multi-Use	783,200	13.604 kWh/SF (consumption rate for Office)	10,654,652	10.65
Community Commercial	220,000	11.329 kWh/SF (consumption rate for Commercial - Retail/Auto Sales)	2,492,380	2.49
Subtotal, Non-residential	4,367,200	-	36,678,212	36.68
Total Buildout Demand			83,041,312	83.04

du = dwelling unit

¹ Source: DEER, 2008. Specific consumption rates for school uses are not available, but SCE has indicated that it would have enough electricity to serve the entirety of the 2012 Modified Project, including the proposed high school.

² 1 Gwh = 1,000,000 kwh

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Project Natural Gas Demand

The 2012 Modified Project is forecast to consume roughly 429 billion British thermal units (BTUs) of natural gas per year without the optional conversion, or 457 BTUs with the optional conversion, as shown below in Table 5.13-14a and 5.13-14b, respectively. This represents an increase of 105 billion BTUs (or 133 billion BTUs with the optional conversion) as compared to the estimated consumption of the 2011 Approved Project. SCGC expects to have adequate supplies of natural gas for this forecasted natural gas demand, and development of the 2012 Modified Project can be served by existing gas mains located adjacent to the Proposed Project Site (Garcia 2012). Therefore, like the 2011 Approved Project, the 2012 Modified Project would not create a significant impact with respect to natural gas facilities or services.

*Table 5.13-14a
Estimated Natural Gas Demand at Buildout
(2012 Modified Project Without Optional Conversion)*

<i>Land Use</i>	<i>Quantity</i>	<i>Annual Natural Gas Demand, million BTU</i>	
		<i>Per Unit¹</i>	<i>Total</i>
Residential Land Uses	Residents		
9,500 residential units	23,728	13.7 per capita	325,073.60
Non-residential Land Uses	Square Feet		
Medical and Science	3,364,000	0.0219 (consumption rate for R&D)	73,671.60
Multi-Use	1,318,200	0.0219 (consumption rate for Office)	28,868.58
Community Commercial	220,000	0.0046 (consumption rate for Retail and Auto Sales)	1,012.00
Subtotal, Non-residential Land Uses	4,902,200		103,552.18
Total			428,625.78

¹ Source: DEER, 2008.

Residential rates: USDOE 2008. No rates for different residential unit types were available.

Nonresidential rates: Itron 2006.

Specific consumption rates for school uses are not available, but SCGC has indicated that it would be able to meet the demands of the entirety of the 2012 Modified Project, including the proposed high school.

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Table 5.13-14b
Estimated Natural Gas Demand at Buildout
(2012 Modified Project With Optional Conversion)

<i>Land Use</i>	<i>Quantity</i>	<i>Annual Natural Gas Demand, million BTU</i>	
		<i>Per Unit¹</i>	<i>Total</i>
Residential Land Uses	Residents		
10,700 residential units	26,679	13.7 per capita	365,502.30
Non-residential Land Uses	Square Feet		
Medical and Science	3,364,000	0.0219 (consumption rate for R&D)	73,671.60
Multi-Use	783,200	0.0219 (consumption rate for Office)	17,152.08
Community Commercial	220,000	0.0046 (consumption rate for Retail and Auto Sales)	1,012.00
Subtotal, Non-residential Land Uses	4,367,200		91,835.68
Total			457,337.98

¹ Source: DEER, 2008.

Residential rates: USDOE 2008. No rates for different residential unit types were available.

Nonresidential rates: Itron 2006.

Specific consumption rates for school uses are not available, but SCGC has indicated that it would be able to meet the demands of the entirety of the 2012 Modified Project, including the proposed high school.

Telecommunications

The 2012 Modified Project would require a greater level of telecommunications services compared to the 2011 Approved Project, as the 2012 Modified Project contains a larger number of residential units and a smaller amount of non-residential uses. The impacts of both the 2011 Approved Project and the 2012 Modified Project related to telecommunications facilities and services would be less than significant for the reasons described below.

AT&T would be able to provide telephone infrastructure and service upon request for the 2012 Modified Project (Akin, 2012). As is true for the 2011 Approved Project, an extension of underground cable and conduit and the placement of above-ground telephone equipment cabinets are required to provide service to the 2012 Modified Project. Line extensions charges may apply per Tariff A2 Rule 16. Some relocation of existing telephone infrastructure may be required in order for AT&T to serve the 2012 Modified Project; the cost of any required relocations would be the responsibility of the project applicant or its successor.

As is true for the 2011 Approved Project, the installation and construction of telephone infrastructure would be part of the construction of the 2012 Modified Project; those impacts of such construction and installation are analyzed throughout the various sections of this DSSEIR, and such installation would not cause significant impacts beyond those identified in other sections of this DSSEIR.

Cox Communications will be able to provide cable services to the Proposed Project Site (Cox Communications 2012). Relocation of existing facilities may be required, and placement of new facilities, including above ground cabinets and power supplies, will be required to extend existing infrastructure to serve the 2012 Modified Project. As is true for the 2011 Approved Project, the installation and

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construction of cable infrastructure would be part of the construction of the 2012 Modified Project; the impacts associated with such installation and construction are analyzed throughout the various sections of this DSSEIR, and such installation and construction would not cause significant impacts beyond those identified in other sections of this DSSEIR.

5.13.4.5 Cumulative Impacts

The 2012 Modified Project, in combination with other projects in the area, would increase the overall demand for electricity, natural gas, and telecommunications in Orange County. The total forecasted increase in electricity demand in SCE's service area between 2008 and 2016 is 13,443 GWh, or 13,443,000,000 kWh. According to the California Energy Commission ("CEC"), energy use in the state is growing at a rate of 1.25 percent per year and peak demand is growing at a rate of 1.35 percent per year (CEC 2009). Air conditioning use is the primary contributor to the growth in peak electricity demand. To meet the growing energy demands of the state, the CEC is implementing metering infrastructure to support stronger demand-response policies. The California Public Utilities Commission has authorized installation of 11.7 million smart electric meters and 5.1 million smart natural gas meters. Smart meters measure energy consumption at intervals of one hour or less, and enable utilities to offer their customers time-based rates for electricity and natural gas (CPUC 2010). In addition, many utility companies offer incentives for recycling older inefficient air conditioners. In addition, the CEC is working to develop dynamic pricing tariffs to reduce demand for electricity at peak periods (CEC 2009). According to SCE, the electrical demands of the 2012 Modified Project at buildout are within the parameters of projected load growth in the Orange County area which SCE is planning to meet (Nelson 2012).

Cumulative development in the vicinity of the Proposed Project Site, including the 2012 Modified Project, would increase the overall demand for natural gas. Based on present conditions of natural gas supply and regulatory policies, SCGC expects to have adequate supplies of natural gas to serve cumulative development, including the 2012 Modified Project (Garcia 2012). The 2010 California Gas Report projects that natural gas consumption in the SCGC service area will decrease from 2,582 million cubic feet ("MMCF") per day in 2010 to 2,467 MMCF per day in 2030. Total supplies are projected to be 3,875 MMCF per day. Therefore, no cumulative impacts related to natural gas are anticipated.

Cox and AT&T would be able to accommodate the needs for telephone, internet, wireless, and cable service for the 2012 Modified Project and other projects in the area (Cox Communications 2012; Akin 2012). Accordingly, no adverse impacts on such services are anticipated.

5.13.4.6 Applicable Mitigation Measures from the 2011 Certified EIR

No mitigation measures were recommended in the 2011 Certified EIR since the 2011 Approved Project's impacts were less than significant without mitigation.

5.13.4.7 Level of Significance Before Additional Mitigation

No significant impacts relating to electric services, natural gas services or telecommunications services have been identified. In addition, PPPs 4-3 through 4-5 and PDF 4-7 listed above would lessen the impact of the 2012 Modified Project on electricity, natural gas, and telecommunications. All 2012 Modified Project impacts related to those services will be less than significant without mitigation.

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5.13.4.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are recommended by this DSSEIR since the 2012 Modified Project's impacts are less than significant without mitigation.

5.13.4.9 Level of Significance After Additional Mitigation

No significant impacts relating to electric, natural gas or telecommunications services have been identified for the 2012 Modified Project.

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5.12 TRANSPORTATION AND TRAFFIC

This section of the DSSEIR evaluates the potential for implementation of the 2012 Modified Project to result in transportation and traffic impacts as compared to the 2011 Approved Project. The analysis in this section is based in part on the following technical report:

- *Heritage Fields Project 2012 General Plan Amendment and Zone Change Traffic Impact Analysis*, Urban Crossroads, June 21, 2012 (the "Traffic Study").

A complete copy of this study is included in the Technical Appendices to this DSSEIR as Appendix I. Consistent with the Traffic Study Scope of Work (the "Scope of Work", attached as Appendix 1.1 to the Traffic Study), the Traffic Study performed analyses for years 2015, 2030, and Post-2030 for the 2012 Modified Project for Project Option 1 and Option 2 Scenarios as follows:

- Option 1 - Includes the conversion of Institutional (Education) and Office land uses to Multi-Use (Non-Residential) or Medical and Science (R&D) in District 1 North.
- Option 2 – In addition to the Option 1 conversions in District 1 North, this option includes a relocation of Multi-Use and Retail from District 1 North to District 1 South, as well as changes in Districts 1 North to accommodate approved residential units displaced from a portion of District 1 South.

For consistency with the terminology used in this DSSEIR, this section will use the term "2012 Modified Project", which has the same meaning in this section and in the Traffic Study as in the Scenarios "2012 Modified Project; Option 1" or as "2012 Modified Project Option 2".

5.12.1 Environmental Setting

5.12.1.1 Analysis Scope and Methodology

Pursuant to the approved Scope of Work, the Traffic Study identifies potential impacts of the 2012 Modified Project based on existing traffic conditions and years 2015, 2030 and Post-2030 future traffic conditions. The baseline for this DSSEIR is the 2011 Approved Project, not the existing conditions at the time that the environmental documentation is prepared. Although the existing physical condition would generally be the baseline for analysis, in this case, the impacts of the 2011 Approved Project have been fully analyzed in the context of expected growth and all feasible mitigation has been imposed. The 2011 Approved Project is vested pursuant to a development agreement and would remain vested whether or not the 2012 Modified Project is approved. Therefore, the DSSEIR analysis aims to determine any traffic impacts expected from the proposed changes to the 2011 Approved Project being made by the 2012 Modified Project, and additional mitigation, if required. Nonetheless, for informational purposes only, this report includes the Existing-Plus 2012 Modified Project Option 1, and Existing-Plus 2012 Modified Project Option 2 conditions analyses. These scenarios assume hypothetically that the 2012 Modified Project (Option 1, or Option 2) would be constructed immediately. "Existing" refers to the physical conditions in the study area at the time the Traffic Study was prepared. The Existing-Plus 2012 Modified Project (Option 1, and Option 2) analyses are a theoretical construct; a project of this scale will obviously not occur instantaneously, and this scenario does not take into account the cumulative growth that would realistically occur during the course of development of the 2012 Modified Project, which would include various on-site and off-site infrastructure improvements in conjunction with progressive growth in the

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North Irvine Transportation Mitigation (NITM) Program area. The following traffic conditions are analyzed:

Existing Conditions

- 2011 and 2012 peak hour intersection counts and 24-hour segment counts

Existing Plus Project Conditions

- with the 2012 Modified Project Option 1
- with the 2012 Modified Project Option 2

The existing plus project scenario for both Options 1 and 2 assumes the 2012 Modified Project, including the DB Units. The Existing-Plus-2012 Modified Project analysis is below in Section 5.12.4.2.

Interim Year 2015 Analysis

- Interim Year 2015 without Project (Existing Uses plus change to Multi-Use and Medical and Science (R&D) in Districts 1 North and 1 South)
- Interim Year 2015 with Project Option 1
- Interim Year 2015 with Project Option 2

The year 2015 analysis is below in Section 5.12.4.3.

Interim Year Long Term 2030 Analysis

- Long Term Year 2030 without Project (2011 Approved Project - Baseline)
- Long Term Year 2030 with the 2012 Modified Project Option 1
- Long Term Year 2030 with the 2012 Modified Project Option 2

The year 2030 analysis is below in Section 5.12.4.5.

General Plan Buildout (Post-2030) Analysis

- General Plan Buildout (Post 2030) without Project (2011 Approved Project - Baseline)
- General Plan Buildout (Post 2030) with the 2012 Modified Project Option 1
- General Plan Buildout (Post 2030) with the 2012 Modified Project Option 2

The Post-2030 analysis is below in Section 5.12.4.6

Pursuant to the Scope of Work, the analysis in the Traffic Study identifies potential impacts of the 2012 Modified Project based on existing traffic conditions and 2015, 2030 and Post-2030 future traffic conditions. Existing traffic conditions are based on 2011 and 2012 intersection peak hour and 24-hour roadway segment traffic counts. Future traffic conditions have been prepared using the Irvine Transportation Analysis Model, Version 8.4-10 (ITAM 8.4-10) and the City of Lake Forest Traffic Analysis Model (LFTAM). For the Traffic Study, traffic volume changes generated by ITAM 8.4-10 are overlayed on LFTAM datasets within the City of Lake Forest, and the ITAM 8.4-10 is directly utilized for all other locations in the traffic analysis study area.

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The three future cumulative growth settings (2015, 2030 and Post-2030) are based on the existing circulation system plus improvements that are planned to be in place in each future time frame and the land use and development growth that is projected in each future time frame.

The NITM Program was established in 2003 to identify mitigation and provide a funding mechanism for transportation improvements and mitigation needed in North Irvine, including in and around the traffic analysis study area for the Proposed Project. The circulation system improvements that are programmed to be fully funded by the NITM Program have been included in the year 2015, year 2030 and Post-2030 scenarios analyzed in this study. Circulation system improvements that are only partially funded by the NITM Program are assumed to be in place only in the Post-2030 scenario when system-wide improvements are assumed.

For locations where partially funded NITM improvements have been identified and where the 2012 Modified Project exceeds adopted impact thresholds based on this analysis, the partially funded NITM improvements are considered first to determine whether they mitigate the 2012 Modified Project impact.

Development projects that have been approved in and around the study area have been included in the future traffic conditions analyzed here along with any circulation system improvements related to those approved projects. Recently approved projects assumed in this analysis include the tract map for PA 40, the IBC Vision Plan, PA 9, and the Western Sector Park Development Plan Project.

5.12.1.2 Study Area

Figure 5.12-1 illustrates the study area that was defined in the approved Scope of Work and that was applied in the Traffic Study analysis that is summarized in this section. The broad study area includes analysis locations in the Cities of Lake Forest, Laguna Hills, Laguna Woods, Mission Viejo, Aliso Viejo, and Tustin. The analysis results verify that the study area encompasses potential traffic impacts associated with the 2012 Modified Project.

5.12.1.3 Performance Criteria

Traffic operations of roadway facilities are described with the term "Level of Service" ("LOS"). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS "A", representing completely free-flow conditions, to LOS "F", representing breakdown in flow resulting in stop-and-go conditions. LOS "E" represents operations at or near capacity, an unstable level, where vehicles are operating with the minimum spacing for maintaining uniform flow. Table 5.12-1 summarizes the volume/capacity (V/C) ranges for LOS "A" through "F" for arterial roads and freeway/tollway ramps. The V/C ranges listed for arterial roads are designated in the Orange County Transportation Authority ("OCTA") Congestion Management Program ("CMP") as well as the General Plan for Irvine and for the other jurisdictions within the traffic analysis study area. The V/C ranges listed for freeway/tollway segments are based on the V/C and LOS relationships specified in the HCM for basic freeway sections.

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Table 5.12-1
Volume/Capacity Ratio Level of Service (LOS) Ranges

<i>LOS</i>	<i>Volume/Capacity (V/C) Ratio Range</i>	
	<i>Arterial Roads</i>	<i>Freeway Segments</i>
A	0.00 - 0.60	0.00 - 0.30
B	0.61 - 0.70	0.31 - 0.50
C	0.71 - 0.80	0.51 - 0.71
D	0.81 - 0.90	0.72 - 0.89
E	0.91 - 1.00	0.90 - 1.00
F	Above 1.00	Above 1.00

Sources: Urban Crossroads, 2012.

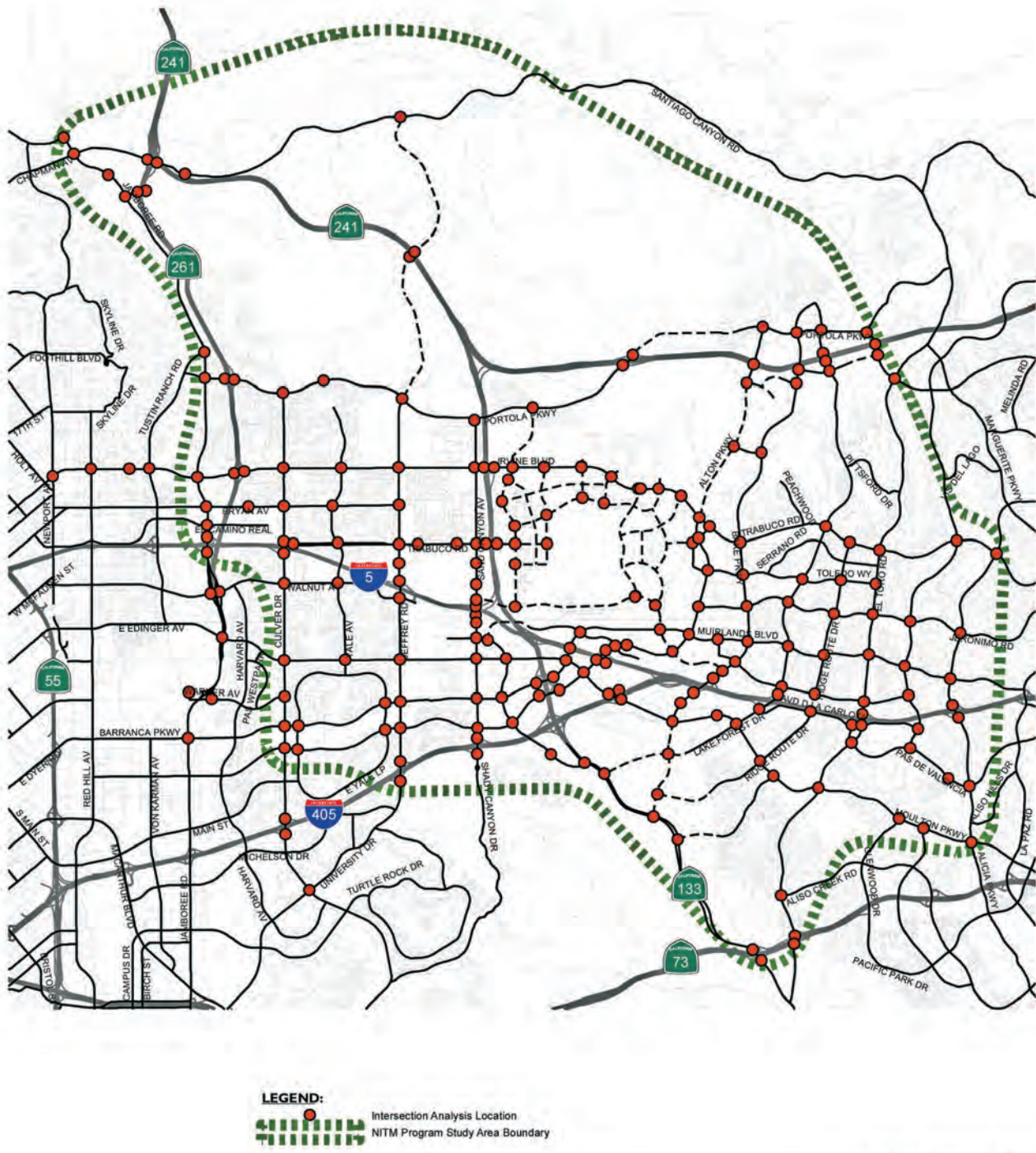
The overall performance criteria applied in this analysis are summarized in Table 5.12-1. The criteria include components for arterial roadways, intersections, freeway/tollway mainline segments and freeway/tollway ramps, and are based on LOS calculation methodologies and performance standards that have been adopted by the governing jurisdictions for the study area and by the OCTA as part of the CMP. When analyzing individual locations on the study area circulation system, the criteria of the jurisdiction in which a given facility is located has been applied in this study. As required in the City's NITM Ordinance, the performance standards applied in this study are consistent with those approved in the 2003 NITM Program Nexus Study (the "Nexus Study").

The arterial roadway criteria involve the use of average daily traffic ("ADT") V/C ratios. The criteria are supplemented by the City's Link Capacity Analysis guidelines which require that arterial deficiencies identified based on ADT V/C ratios be further examined using peak hour data.

The intersection capacity utilization ("ICU") analysis is based on peak hour volumes and uses individual turn movements and the corresponding intersection lane geometry to estimate level of service. Use of the ICU methodology is consistent with the City's traffic analysis guidelines, and, pursuant to standard practice, the ICU methodology assumes that intersections are signalized.

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Traffic Analysis Study Area



Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-1**

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To address concerns expressed by Caltrans regarding the performance of ramp intersections in the immediate vicinity of the Proposed Project Site, the freeway/tollway ramp intersections at Sand Canyon Avenue/I-5, Irvine Boulevard/SR-133 interchanges and Trabuco Road/SR-133 interchanges are analyzed in this study using the HCM methodology in addition to the ICU methodology. In the HCM intersection analysis methodology, the LOS at an intersection location is determined based on the estimated average delay experienced by all traffic using the intersection. The vehicle delay ranges that correspond to LOS “A” through “F” as specified in the HCM area are summarized in Table 5.12-2.

Table 5.12-2
HCM Intersection Delay Level of Service (LOS) Ranges

<i>LOS</i>	<i>Average Vehicle Delay Signalized</i>	<i>Average Vehicle Delay Unsignalized</i>
A	0 - 10.00 seconds	0 - 10.00 seconds
B	10.01 - 20.00 seconds	10.01 - 15.00 seconds
C	20.01 - 35.00 seconds	15.01 - 25.00 seconds
D	35.01 - 55.00 seconds	25.01 - 35.00 seconds
E	55.01 - 80.00 seconds	35.01 - 50.00 seconds
F	Above 80.00 seconds	Above 50.00 seconds

Source: Urban Crossroads, 2012.

Freeway ramps are analyzed based on AM and PM peak hour ramp volumes taken from intersection volumes at each location in the study area where freeway ramps intersect the arterial system. LOS “E” (V/C not to exceed 1.00) is the performance standard specified in the CMP for arterials that are part of the CMP roadway network, and is applied in this analysis as the performance standard for CMP arterials outside the City, Irvine PA 33 (Spectrum 1/Irvine Center) and PA 36 (Irvine Business Complex/IBC) intersections, the Bake Parkway/I-5 ramp intersections, Alton Parkway at Irvine Boulevard, Bake Parkway at Irvine Boulevard, the Lake Forest Drive/I-5 southbound ramp – Avenida de la Carlota, and Lake Forest/Irvine Center Drive. LOS “D” (V/C not to exceed 0.90) is the performance standard for the remainder of the City and for the remainder of the arterial roadway system in the study area.

For impact analysis purposes, the significance criteria are based on the LOS and either the increase in ICU or V/C due to the 2012 Modified Project. The 2012 Modified Project proposes to amend the City of Irvine General Plan Figure B-1 (Master Plan of Arterial Highways) to delete the on-site extension of Rockfield Boulevard from its existing western terminus to Marine Way, once the OCTA has approved this proposed amendment to the countywide Master Plan of Arterial Highways. The 2012 Modified Project would also amend the General Plan, Objective B-1, Policy (c) regarding LOS “E” consideration as follows:

In conjunction with traffic studies for development proposed in Combined PA 51, a LOS “E” standard would be considered acceptable for intersections impacted in Planning Areas 13, 31, 32, 34, 35, 39 and a portion of Combined PA 51 south of Marine Way. LOS “E” would be acceptable (see previous Figure 3-6, *Proposed Locations Where LOS E May be Acceptable*) subject to the following:

1. Preparation, submittal, processing and approval of a traffic study.
2. Level of Service “E” will only be considered acceptable for an intersection that does not contain a residential quadrant unless the residential development has a net density of 30 dwelling units per acre or greater. Level of Service “E” will not be acceptable along Sand Canyon, except at the Sand Canyon/I-5 Interchange Ramps/Intersections.

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3. Participation/funding to an upgraded traffic signal system, as defined in the Traffic Management Systems Operations Study (TMSOS), and/or an Advance Traffic Management System (ATMS), which may be in place at the time of processing of an individual traffic study. The City, in conjunction with specific traffic studies, shall determine the level of participation/funding required by using criteria and a process developed concurrently with the processing of each traffic study.

Because freeway ramps and mainline segments are part of the CMP highway network, the Traffic Study uses LOS “E” as being acceptable. The freeway mainline and freeway ramp criteria are based on peak hour V/C ratios. The freeway mainline and ramp capacities are based on information contained in the Caltrans Highway Design Manual and the Caltrans Ramp Meter Design Manual. This methodology and criteria have been used for other traffic impact analyses throughout Orange County. The Modified Project is considered to significantly contribute to new/worsened freeway mainline deficiencies in cases where the peak hour V/C increases by more than 0.03 from the 2011 Approved Project to 2012 Modified Project conditions.

For the roadway link V/C and intersection ICU analyses, a significant impact occurs if the roadway link or intersection is deficient without the Project (LOS “F” for CMP intersections or LOS “E” or “F” for all roadway links and all other intersections), and the Project contribution to the “with project” ICU or V/C is .02 or more except at CMP locations outside the City and at County of Orange locations. A significant impact also occurs if the intersection is not deficient without the 2012 Modified Project (LOS “E” for CMP intersections or LOS “D” or better for all other intersections), and the 2012 Modified Project contribution to the “with project” ICU or V/C causes it to become deficient (LOS “F” for CMP intersections or LOS “E” or “F” for all other intersections).

5.12.1.4 Relationship to Other Studies

Several recent studies that have been carried out for locations in the vicinity of the Proposed Project Site are of relevance to the traffic analysis presented here. The projects and studies briefly summarized below have all been approved and have been incorporated into the traffic models that are applied in the Traffic Study that is summarized in this section.

Great Park Neighborhoods General Plan Amendment/Zone Change and VTTM 17008 Amendment Traffic Study (May 2011), and VTTMs 17364, 17283 Amended, 17366, 17368, and 17202 Traffic Study (May 2011) – These studies evaluated project modifications that included the following actions: locating 1,100 low- density residential units, previously located on a programmatic basis within Districts 5 and 7, in the locations depicted on the Vesting Tentative Tract Maps (“VTTMs”), changes to the General Plan land use designation and the associated zoning of these units from Low Density (0-5 du/ac) to Multi-Use (0-40 du/ac); locating 1,500 residential units in a portion of the Transit Oriented District (“TOD”) located within PA 51, to the locations depicted on the VTTMs; locating the 1,269 density bonus units, which had not previously been located on a programmatic basis, in the locations depicted on the VTTMs; locating the remaining 1,025 residential units on the VTTMs; transferring non-residential development intensities between certain zones; and realigning Ridge Valley and “O” Street at Irvine Boulevard. These changes were achieved and implemented through the approved General Plan Amendment, Zone Change, five VTTMs, VTTM and VTPM amendments and Master Plans pursuant to Zoning Ordinance Section 2-17-2, and 9-51-6, Parks Plans, Master Landscape and Trails Plan and Master Wall and Fence Plan amendment approved by the City in September 2011.

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Great Park Western Sector Development Plan Traffic Study (August 2011) - In 2011, the Great Park Corporation sought approval of a Minor Modification to the approved Orange County Great Park Master Plan and a Park Design, which were associated with implementation of the Western Sector Park Development Plan. The Western Sector Park Development Plan consists of minor modifications that would result in: the transfer of non-residential square footage from the northeastern area to the southwestern area of the park; remove the Air Museum and Concessions/Retail, and replace them with the Artist in Residency Facility, the proposed Community Ice Facility, and the proposed Nature Education Garden; and replacement of the existing Air Museum Hangar with Hangar 244. The Western Sector Park Development Plan was approved by the GPC Board and the Irvine City Council on October 20, 2011. Note that the Minor Modification was approved by the Director of Community Development on October 19, 2011 and the Park Design was approved on October 20, 2011.

North Irvine Transportation Mitigation (NITM) Program Nexus Study (April 2003) and North Irvine Transportation Mitigation (NITM) Program Five-Year Review (June 2010) - The nexus study summarized in the first report (completed in April 2003) was carried out as part of the NITM Program, which established a funding mechanism for the transportation improvement mitigation measures identified in the Environmental Impact Reports (EIRs) for three future development projects in north Irvine; 1) Spectrum 8/PA40, 2) Irvine Northern Sphere Area (PAs 5B, 6, 8A and 9), and 3) the Orange County Great Park. The second report (completed in June 2010) summarized the results of a comprehensive NITM Program review. The circulation system improvements that are programmed to be fully funded by the NITM Program have been included in the year 2015, year 2030 and Post-2030 scenarios analyzed in this study.

City of Irvine Planning Area 40 Vesting Tentative Tract Map 17277 Traffic Study (Reference 7) and City of Irvine Planning Area 40/Planning Area 12 (Traveland Site) GPA/ZC and Planning Areas 1 and 9 Density Transfer Traffic Study (June 2008) – These reports, which was completed in October 2010 and June 2008, respectively, presented the findings of traffic studies carried out to determine the impacts of a GPA/ZC for City PAs 40 and 12 as well as a subsequent VTTM for a major portion of PA40. The land use and circulation assumptions for PA40 VTTM 17277 and the PA40/PA12 GPA/ZC project are applied in this study as part of the background conditions.

Bake Parkway – Marine Way Circulation System Amendment Traffic Study (June 2008)– This report, which was completed in June 2008, identified potential traffic circulation needs associated with the relocation of the Bake Parkway at Marine Way intersection from its original General Plan location to a location further northeast on Bake Parkway. The Bake Parkway/Marine Way configuration associated with this approved Circulation System Amendment and the related roadway improvements identified in the traffic study are assumed in the background conditions applied in this study.

5.12.1.5 Existing Roadway Network

Figure 5.12-2 identifies the existing circulation system in the study area together with existing midblock lanes on arterial roadways and the number of existing travel lanes on freeway/tollway mainline segments. Current average daily traffic (“ADT”) counts for midblock arterial roadway segments and AM and PM peak hour turn movement counts at intersection locations in the study area were conducted in 2011 and 2012. ADT midblock and peak hour intersection traffic count worksheets for each location that was

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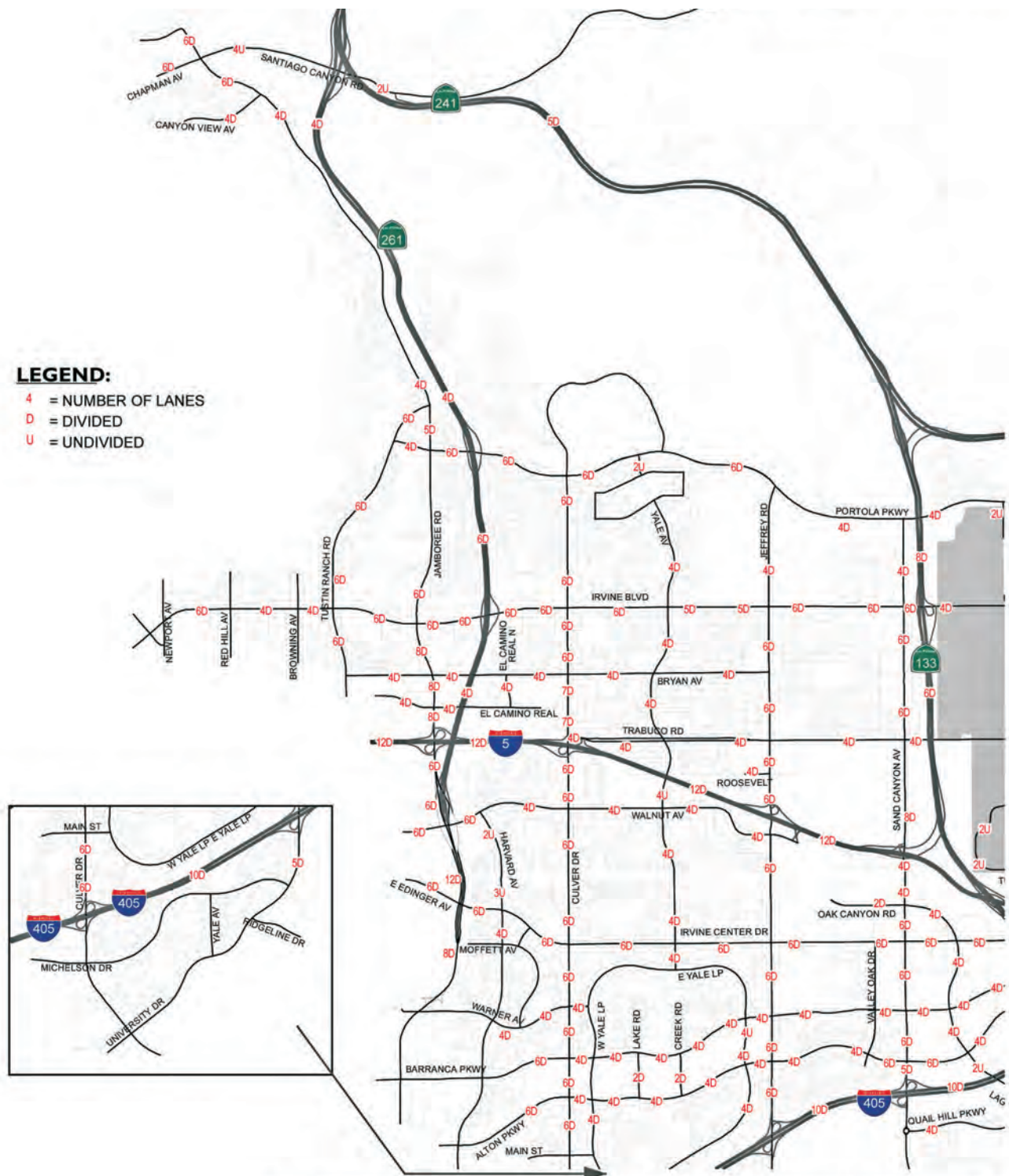
analyzed on the arterial roadway system in the study area are included in Appendices 4.1 and 4.2 to the Traffic Study (Appendix I). Existing freeway mainline count data is consistent with the City PA 6 Traffic Study (AFA, 2011) and PA 33 (Lots 105 and 107/108) Traffic Study (Stantac, 2012), which were taken from the Caltrans Performance Management System (PeMS). Data was extracted for a typical five-day workweek and counts were then averaged.

5.12.1.6 Existing Average Daily Traffic Volumes and Levels of Service

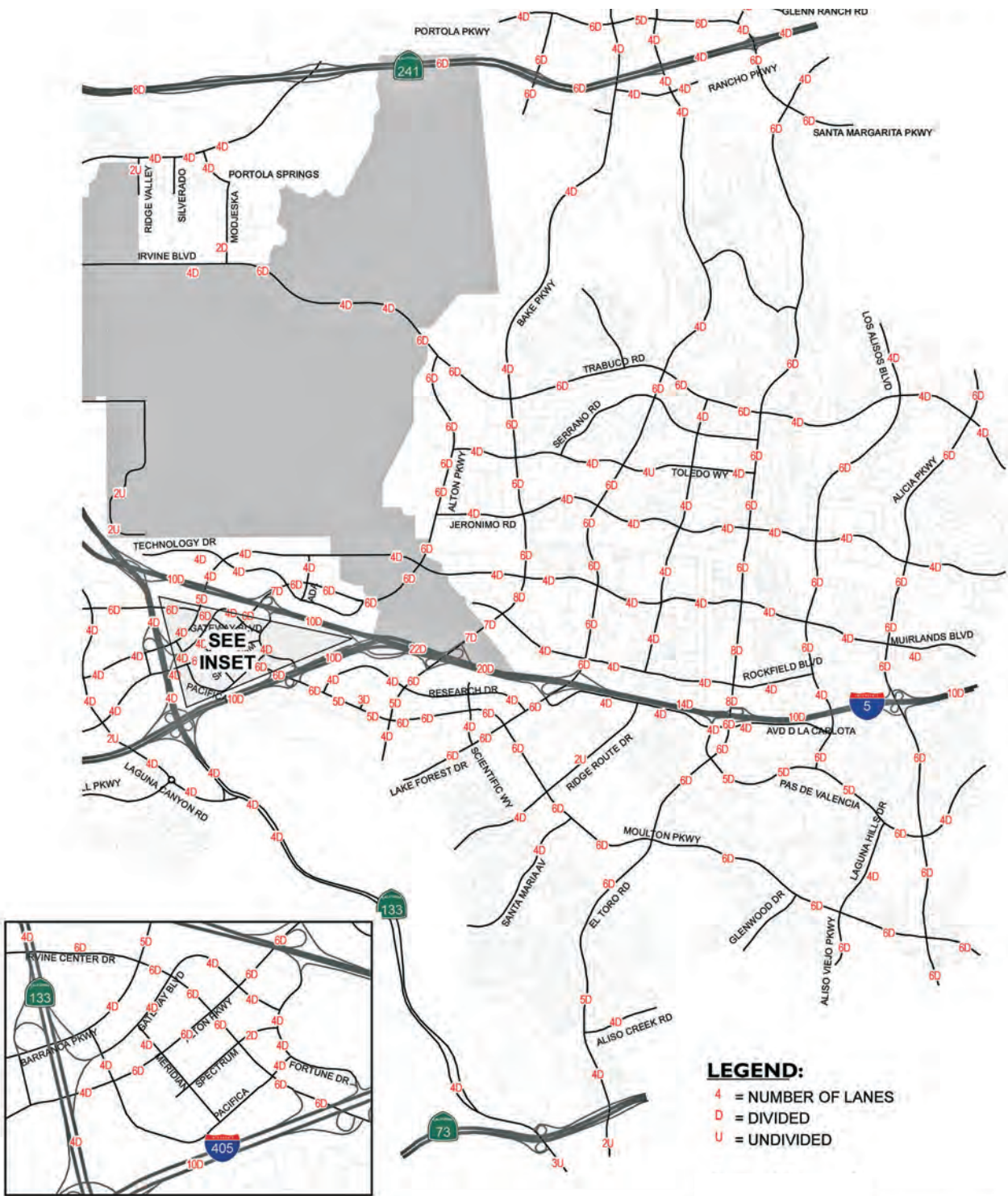
Current ADT volumes and corresponding V/C ratios on the arterial roadway system and the freeway/tollway system in the study area are illustrated in Figures 5.12-3 and 5.12-4. Based on the ADT V/C LOS performance criteria above, the arterials in the study area generally appear to operate at acceptable levels of service with the exception of the following locations:

- Alicia Pkwy (south of Jeronimo Rd)
- Alicia Pkwy (north of Muirlands Bl)
- Alicia Pkwy (I-5 NB Ramps to Muirlands Bl)
- Alicia Pkwy (south of I-5 SB Ramps)
- Avenida Carlota (Paseo de Valencia to El Toro Rd)
- Bake Pkwy (north of Commercentre Dr)
- Bake Pkwy (north of Irvine Bl)
- Bake Pkwy (north of Muirlands Bl)
- Bake Pkwy (south of Rockfield Bl)
- Culver Dr (Main St to San Leandro)
- Culver Dr (San Leandro to I-405 NB Ramps)
- El Toro (I-5 SB Ramps to Avenida Carlota)
- El Toro (north of SR-73)
- El Toro (south of SR-73)
- Jamboree Rd (north of Michelle Dr)
- Jamboree Rd (south of Michelle Dr)
- Laguna Canyon Rd/SR-133 (north of SR-73 NB Ramps)
- Lake Forest (south of Rockfield)
- Portola Pkwy (south of SR-241 SB Ramps)
- Sand Canyon (north of Oak Canyon)
- Santa Margarita (south of SR-241)
- University Dr (I-405 SB Ramps to Michelson Dr)

Existing Circulation System



West Study Area



East Study Area

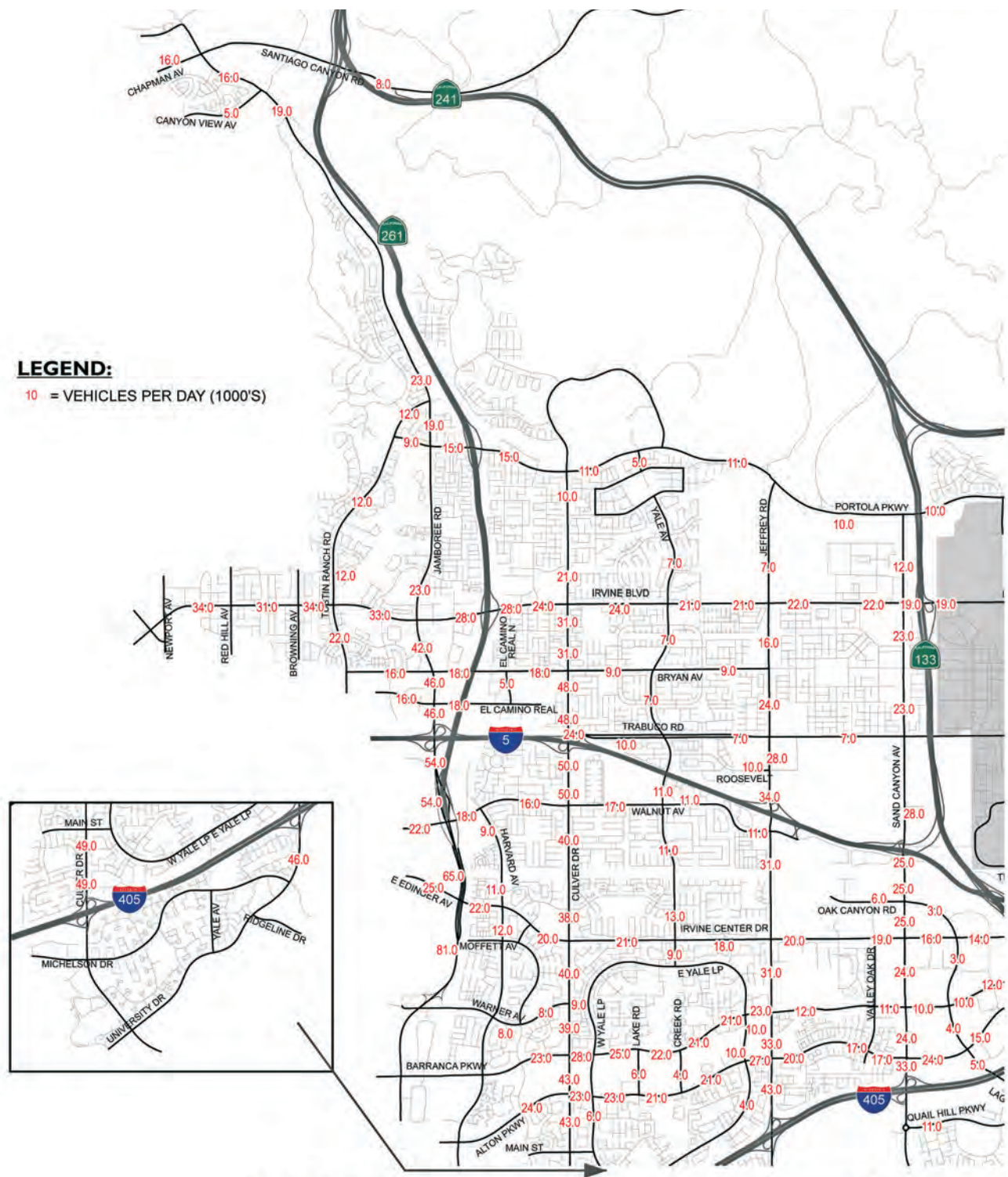
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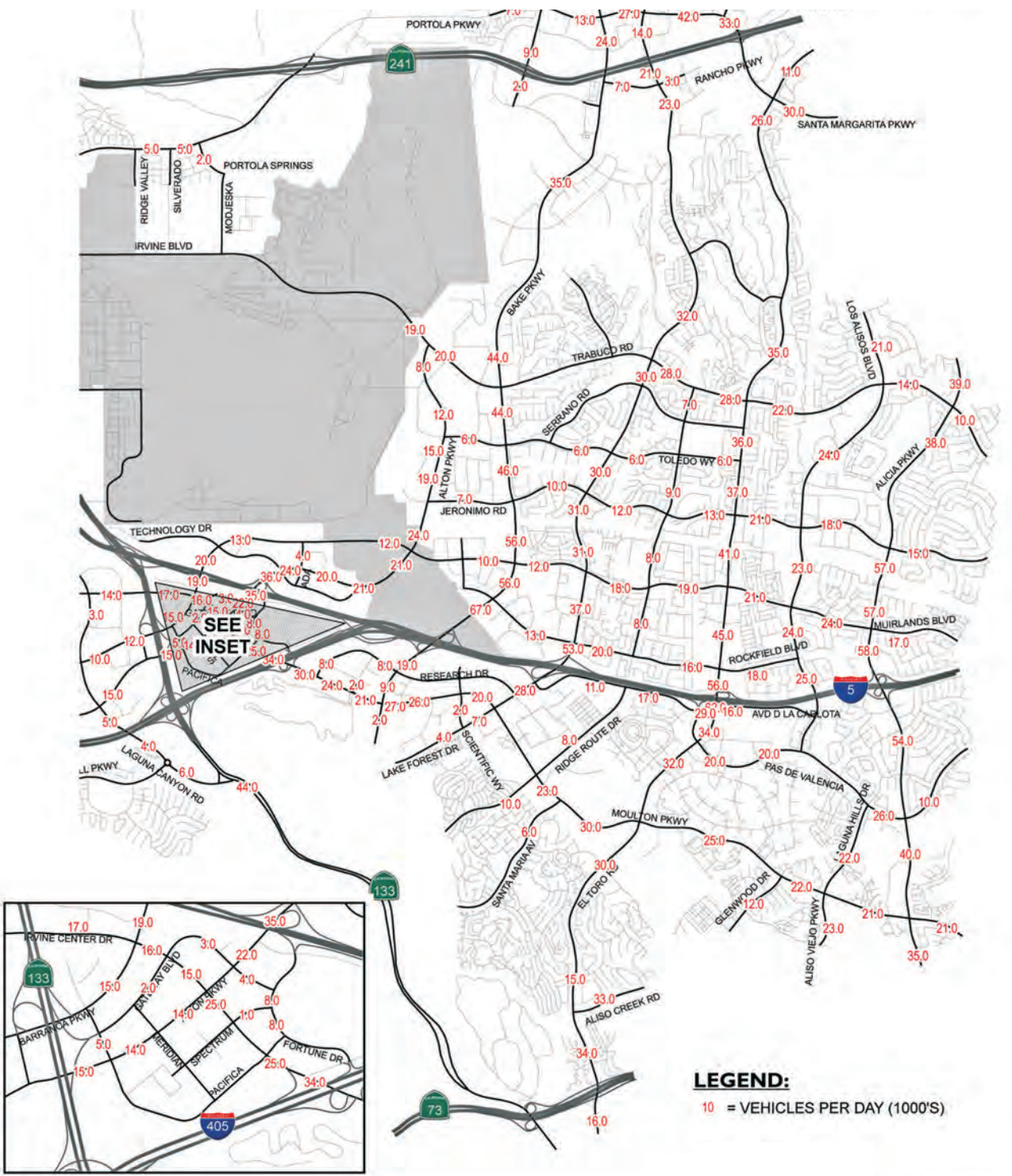
Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

Existing ADT Volumes



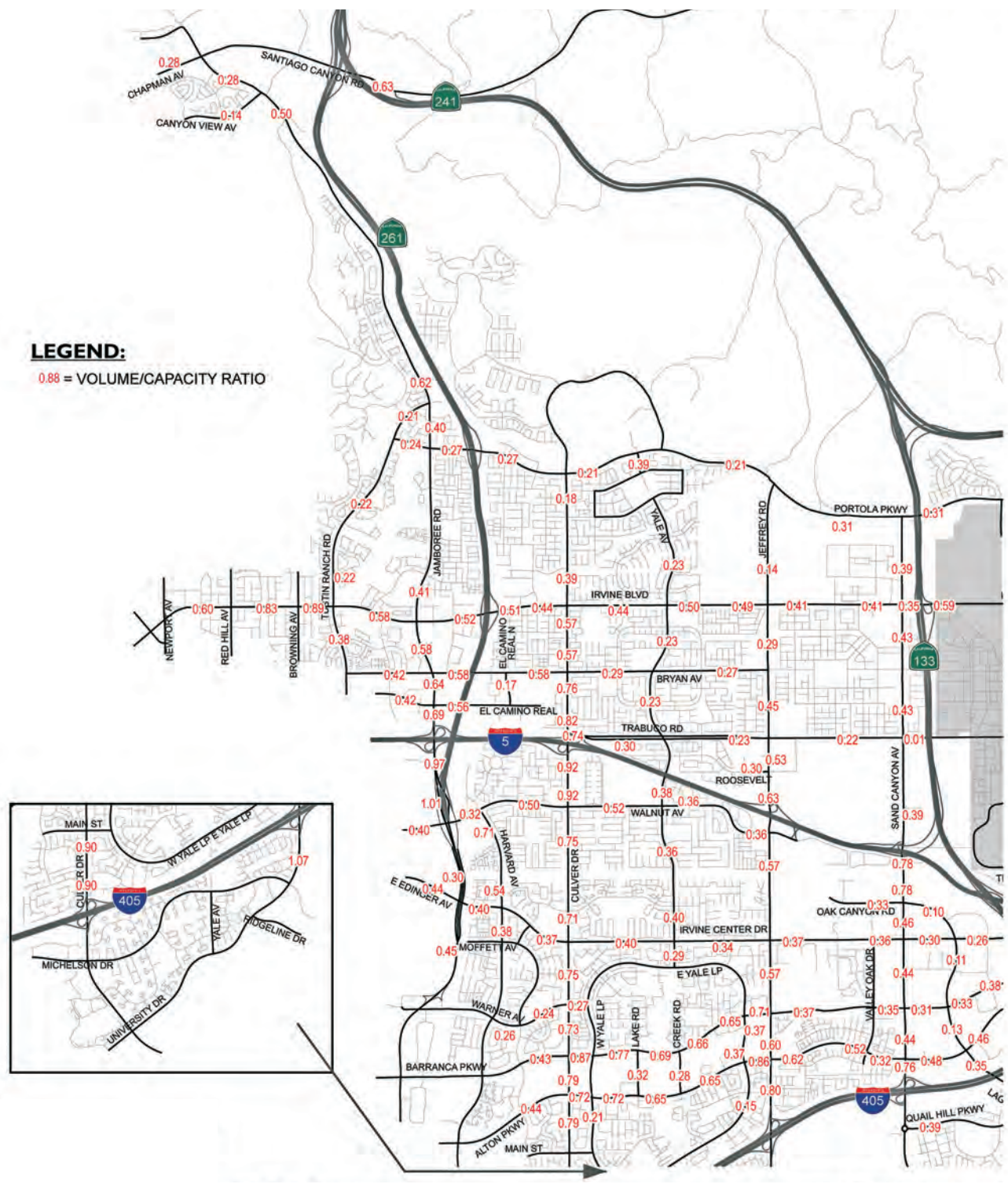
West Study Area



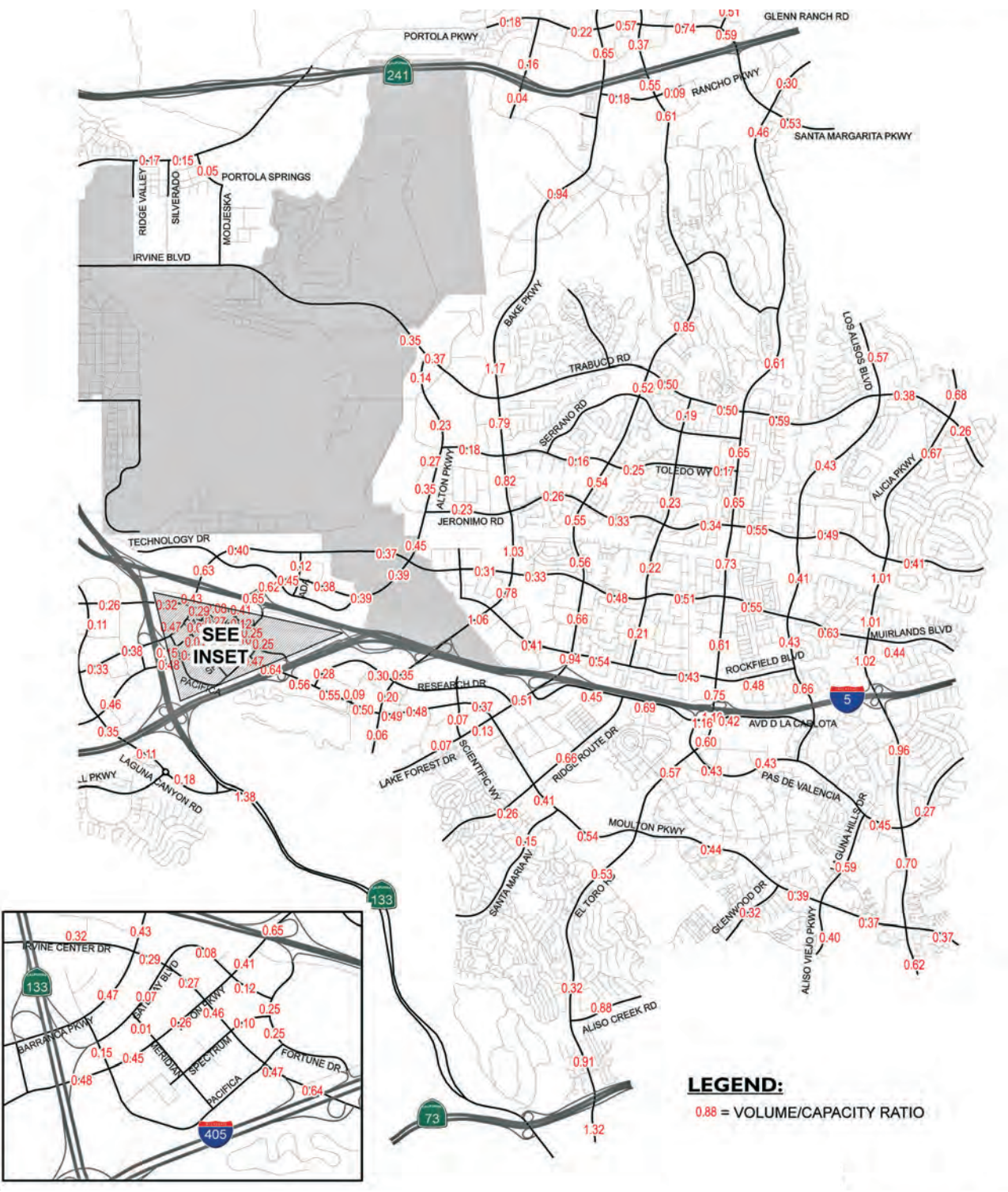
East Study Area



Existing ADT V/C Ratios



West Study Area



East Study Area



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5.12.1.7 Existing Peak Hour Intersection Levels of Service

Existing ICU values were calculated for the intersections illustrated in Figure 5.12-5 using peak hour traffic count data in combination with the existing lane configuration of each location. Use of the ICU methodology is consistent with the traffic analysis guidelines of the City and the OCTA CMP, and, by standard practice, the ICU methodology assumes that intersections are signalized. The existing conditions intersections peak hour levels of service are summarized in Table 5.12-3.

*Table 5.12-3
Existing Intersection LOS Summary (ICU Methodology)*

Intersection	Funded NITM ¹	LOS E OK	Existing Conditions			
			AM Peak Hour		PM Peak Hour	
			ICU	LOS	ICU	LOS
Newport Av at Irvine Bl			0.63	B	0.58	A
Red Hill Av at Irvine Bl	F		0.64	B	0.69	B
Browning Av at Irvine Bl			0.75	C	0.70	B
Tustin Ranch Rd at Irvine Bl	F		0.83	D	0.79	C
Jamboree Rd at Tustin Ranch Rd	P		0.49	A	0.59	A
Jamboree Rd at Portola Pw			0.56	A	0.74	C
Jamboree Rd at Irvine Bl	F	Yes	0.78	C	0.70	B
Jamboree Rd at Bryan Av			0.64	B	0.66	B
Jamboree Rd at El Camino Real			0.59	A	0.66	B
Jamboree Rd at I-5 NB Ramps			0.78	C	0.86	D
Jamboree Rd at I-5 SB Ramps			0.79	C	0.73	C
Jamboree Rd SB at Walnut Av			0.77	C	0.53	A
Jamboree Rd NB at Walnut Av			0.32	A	0.49	A
Jamboree Rd at Edinger Av		Yes	0.56	A	0.55	A
Jamboree Rd NB at Warner Av			0.31	A	0.81	D
Jamboree Rd at Barranca Pw		Yes	0.75	C	0.90	D
SR-261 SB Ramps at Portola Pw			0.31	A	0.35	A
SR-261 NB Ramps at Portola Pw			0.27	A	0.37	A
SR-261 SB Ramps at Irvine Bl			0.44	A	0.48	A
SR-261 NB Ramps at Irvine Bl			0.43	A	0.53	A
Culver Dr at Portola Pk			0.39	A	0.40	A
Culver Dr at Irvine Bl			0.61	B	0.64	B
Culver Dr at Bryan Av			0.66	B	0.58	A
Culver Dr at Trabuco Rd	F		0.59	A	0.65	B
Culver Dr at I-5 SB Ramps	F		0.60	A	0.74	C
Culver Dr at Walnut Av	F		0.68	B	0.76	C
Culver Dr at ICD			0.61	B	0.62	B
Culver Dr at Warner Av			0.62	B	0.62	B
Culver Dr at Barranca Pw	P		0.72	C	0.77	C
Culver Dr at Alton Pkwy			0.75	C	0.82	D
Culver Dr at I-405 NB Ramps			0.51	A	0.73	C
Culver Dr at I-405 SB Ramps			0.54	A	0.70	B
Culver Dr at University	F		0.70	B	0.90	D
Yale Av at Irvine Bl	F		0.59	A	0.74	C
Yale Av at Bryan Av			0.31	A	0.39	A

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Table 5.12-3
Existing Intersection LOS Summary (ICU Methodology)

Intersection	Funded NITM ¹	LOS E OK	Existing Conditions			
			AM Peak Hour		PM Peak Hour	
			ICU	LOS	ICU	LOS
Yale Av at Trabuco Rd			0.37	A	0.39	A
Yale Av at Walnut Av			0.40	A	0.63	B
Yale Av at ICD			0.51	A	0.55	A
W Yale Lp at Barranca Pw			0.54	A	0.52	A
E Yale Lp at Barranca Pw			0.58	A	0.52	A
W Yale Loop at Alton Pw			0.49	A	0.64	B
E Yale Lp at Alton Pw			0.65	B	0.62	B
Jeffrey Rd at Portola Pw			0.34	A	0.35	A
Jeffrey Rd at Irvine Bl			0.47	A	0.55	A
Jeffrey Rd at Bryan Av			0.45	A	0.37	A
Jeffrey Rd at Trabuco Rd			0.45	A	0.42	A
Jeffrey Rd at Roosevelt			0.56	A	0.57	A
Jeffrey Rd at I-5 NB Ramps			0.52	A	0.59	A
Jeffrey Rd at Walnut Av	F		0.67	B	0.66	B
Jeffrey Rd at ICD	F		0.51	A	0.82	D
Jeffrey Rd at Barranca Pw	P		0.68	B	0.69	B
Jeffrey Rd at Alton Pw	F		0.86	D	0.78	C
Jeffrey Rd at I-405 NB Ramps	P		0.71	C	0.68	B
University Dr at I-405 SB Ramps			0.61	B	0.54	A
Sand Canyon Av at Portola Pw			0.27	A	0.29	A
Sand Canyon Av at Irvine Bl			0.50	A	0.49	A
Sand Canyon Av at Trabuco Pw	F		0.39	A	0.37	A
Sand Canyon Av at I-5 NB Ramps	F		0.67	B	0.50	A
Sand Canyon Av at Marine Wy			0.59	A	0.60	A
Sand Canyon Av at I-5 SB Ramps	F		0.67	B	0.61	B
Sand Canyon Av at Oak Canyon	F		0.50	A	0.51	A
Sand Canyon Av at ICD			0.42	A	0.43	A
Sand Canyon Av at Barranca Pw			0.43	A	0.44	A
Sand Canyon Av at Alto	F		0.54	A	0.63	B
Sand Canyon Av at I-405 NB Ramps	F		0.56	A	0.41	A
Sand Canyon Av at I-405 SB Ramps			0.74	C	0.51	A
Laguna Canyon Rd at ICD			0.20	A	0.27	A
Laguna Canyon Rd at Barranca Pw			0.27	A	0.26	A
Laguna Canyon Rd at Alton Pw			0.41	A	0.37	A
SR-133 SB Ramps at Irvine Bl			0.39	A	0.43	A
SR-133 NB Ramps at Irvine Bl			0.46	A	0.48	A
Banting at Barranca Pkwy			0.58	A	0.41	A
Banting at Alton Pw			0.54	A	0.41	A
Laguna Canyon Rd at Old Laguna Canyon Rd	F		0.90	C	0.89	D
Laguna Canyon Rd at SR-73 NB Ramps		Yes	1.00	E	0.83	D
Laguna Canyon Rd at SR-73 SB Ramps		Yes	0.32	A	0.38	A
Portola Pw at SR-241 NB Ramps			0.16	A	0.10	A
Portola Pw at SR-241 SB Ramps			0.15	A	0.20	A
Barranca Pw at Technology	P		0.47	A	0.62	B
Barranca Pw at I-5 HOV Ramp		Yes	0.46	A	0.35	A

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Table 5.12-3
Existing Intersection LOS Summary (ICU Methodology)

Intersection	Funded NITM ¹	LOS E OK	Existing Conditions			
			AM Peak Hour		PM Peak Hour	
			ICU	LOS	ICU	LOS
Barranca Pw at ICD		Yes	0.48	A	0.55	A
Barranca Pw at Pacifica		Yes	0.52	A	0.61	B
Pacifica at Gateway		Yes	0.51	A	0.55	A
Alton Pw at Portola Pw			0.40	A	0.23	A
Alton Pw at SR-241 Ramps			0.18	A	0.28	A
Alton Pw at Irvine Bl	F	Yes	0.45	A	0.49	A
Alton Pw at Toledo Wy			0.38	A	0.36	A
Alton Pw at Jeronimo Rd			0.35	A	0.77	C
Alton Pw at Barranca Pw			0.45	A	0.58	A
Alton Pw at Ada			0.29	A	0.42	A
Alton Pw at Technology	P		0.39	A	0.55	A
Alton Pw at I-5 NB Ramps	F	Yes	0.62	B	0.38	A
Alton Pw at Enterprise		Yes	0.60	A	0.54	A
Alton Pw at ICD	P	Yes	0.54	A	0.45	A
Alton Pw at Pacifica		Yes	0.53	A	0.33	A
Fortune Dr /I-5 SB Ramps		Yes	0.27	A	0.52	A
Enterprise Dr at Fortune Dr		Yes	0.40	A	0.70	B
ICD at Enterprise Dr	P	Yes	0.59	A	0.54	A
ICD at I-405 SB Ramps	P	Yes	0.59	A	0.55	A
Bake Pw at Portola Pw			0.71	A	0.58	A
Bake Pw at Irvine Bl	F	Yes	0.73	C	0.72	C
Bake Pw at Toledo Wy			0.68	C	0.63	B
Bake Pw at Jeronimo Rd	F		0.81	D	0.76	C
Bake Pw at Muirlands Bl			0.58	A	0.64	B
Bake Pw at Rockfield Bl			0.54	A	0.63	B
Bake Pw at I-5 NB Ramps		Yes	0.82	D	0.58	A
Bake Pw at I-5 SB Ramps	F	Yes	0.67	B	0.72	C
Bake Pw at Research Dr			0.36	A	0.46	A
Bake Pw at ICD			0.34	A	0.39	A
Lake Forest Dr at SR-241 NB Ramp			0.29	A	0.35	A
Lake Forest Dr at Portola Pw			0.46	A	0.69	B
Lake Forest Dr at SR-241 SB Ramp			0.38	A	0.40	A
Lake Forest Dr at Trabuco Rd			0.55	A	0.59	A
Lake Forest Dr at Toledo Wy			0.52	A	0.52	A
Lake Forest Dr at Jeronimo Rd	P		0.69	B	0.67	B
Lake Forest Dr at Muirlands Bl	F		0.54	A	0.72	C
Lake Forest Dr at Rockfield Bl	P	Yes	0.54	A	0.68	B
Lake Forest Dr at I-5 NB Ramps			0.44	A	0.66	B
Lake Forest Dr at Avenida Carlota/I-5 SB	F	Yes	0.70	B	0.70	B
Lake Forest Dr at ICD			0.41	A	0.51	A
Ridge Route Dr at Muirlands Bl			0.48	A	0.60	A
Ridge Route Dr at Rockfield Bl	P		0.38	A	0.47	A
Ridge Route Dr at Avenida Carlota			0.30	A	0.63	B
Ridge Route at Moulton Pw			0.44	A	0.60	A
Paseo de Valencia at Ave	P		0.47	A	0.58	A

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Table 5.12-3
Existing Intersection LOS Summary (ICU Methodology)

Intersection	Funded NITM ¹	LOS E OK	Existing Conditions			
			AM Peak Hour		PM Peak Hour	
			ICU	LOS	ICU	LOS
Santa Maria Av at Moulton Pw			0.42	A	0.65	B
El Toro Rd at Muirlands Bl			0.62	B	0.74	C
El Toro Rd at Rockfield Bl			0.52	A	0.55	A
El Toro Rd at I-5 NB Ramps		Yes	0.61	B	0.82	D
El Toro Rd at Avenida Carlota	P	Yes	01.03	F	1.26	F
El Toro Rd at Paseo de Valencia			0.47	A	0.58	A
El Toro Rd at Moulton Pw		Yes	0.59	A	0.53	A
El Toro Rd at Aliso Creek Rd			0.71	C	0.93	E
El Toro Rd at SR-73 NB Ramps		Yes	0.69	B	0.68	B
El Toro Rd at SR-73 SB Ramps		Yes	0.45	A	0.66	B
I-5 NB Ramps at Trabuco Rd			0.49	A	0.54	A
Laguna Canyon Rd at Quail Hill Pw			0.24	A	0.28	A
Bake Pw at Commercentre Dr			0.56	A	0.56	A
Ridge Route Dr at Trabuco Rd			0.49	A	0.59	A
Ridge Route Dr at Toledo Wy			0.33	A	0.30	A
Ridge Route Dr at Jeronimo Rd			0.45	A	0.46	A
Glenn Ranch Rd at Portola Pw			0.57	A	0.55	A
Portola Pw East at SR-241 Ramps			0.43	A	0.59	A
El Toro Rd at Portola Pw			0.64	B	0.61	B
El Toro Rd at Trabuco Rd			0.68	B	0.56	A
El Toro Rd at Toledo Wy			0.54	A	0.46	A
El Toro Rd at Jeronimo Rd	P		0.65	B	0.77	C
Los Alisos Bl at Trabuco Rd			0.66	B	0.68	B
Los Alisos Bl at Jeronimo Rd	P		0.69	B	0.78	C
Muirlands Bl at Los Alisos Bl	P		0.67	B	0.74	C
Los Alisos Bl at Rockfield Bl	P		0.64	B	0.69	B
Los Alisos Bl at Avenida Carlota			0.61	B	0.50	A
Los Alisos Bl at Paseo de Valencia			0.41	A	0.46	A
Moulton Pw at Glenwood/Indian Creek			0.46	A	0.53	A
Laguna Hills Dr at Paseo de Valencia			0.59	A	0.70	B
Moulton Pw at Laguna Hills Dr			0.53	A	0.61	B
Trabuco Rd at Alicia Pw			0.70	B	0.64	B
Jeronimo Rd at Alicia Pw			0.72	C	0.72	C
Alicia Pw at Muirlands Bl	P		0.68	B	0.82	D
I-5 NB Ramps at Alicia Pw			0.55	A	0.59	A
I-5 SB Ramps at Alicia Pw			0.75	C	0.82	D
Alicia Pw at Paseo de Valencia			0.59	A	0.61	B
Moulton Pw at Alicia Pw			0.58	A	0.67	B
Scientific Wy at ICD			0.49	A	0.64	B
Loop Rd at Jamboree Rd			0.41	A	0.28	A
Sand Canyon Av at Burt Rd			0.65	B	0.55	A
Jamboree Rd at Santiago Canyon Rd			0.52	A	0.57	A
Jamboree Rd at Chapman Av			0.44	A	0.76	B
SR-241/SR-261 SB Ramps at Chapman Av			0.34	A	0.45	A
SR-241/SR-261 NB Ramps at Chapman Av			0.37	A	0.60	A

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*Table 5.12-3
Existing Intersection LOS Summary (ICU Methodology)*

<i>Intersection</i>	<i>Funded NITM¹</i>	<i>LOS E OK</i>	<i>Existing Conditions</i>			
			<i>AM Peak Hour</i>		<i>PM Peak Hour</i>	
			<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
SR-241 NB Ramp at Santiago Canyon Rd			0.28	A	0.35	A
Jamboree Rd at Canyon View			0.61	B	0.33	A
El Camino Real N at Bryan Av			0.37	A	0.39	A
Bake Pw N at Rancho Pw North			0.58	A	0.73	C
Lake Forest Dr at Rancho Pw North			0.36	A	0.45	A
Bake Pw at Rancho Pkw			0.69	B	0.65	B
Ridge Valley at Portola Pw			0.26	A	0.16	A
Modjeska / A St at Irvine Bl			0.44	A	0.43	A

Source: Urban Crossroads, 2012.

Bold = Deficient Intersection

¹. Fully Funded (F), Partially Funded (P)

Based on the intersection LOS performance criteria outlined above, the study area intersections generally appear to operate at acceptable levels of service during peak hours with the exception of the following intersection:

- El Toro Road at Aliso Creek Road

5.12.1.8 Existing Freeway Ramp Levels of Service

Existing AM and PM peak hour ramp volumes were taken from intersection counts at each location in the study area where freeway ramps intersect the arterial system. The observed peak hour ramp volumes were applied together with the ramp capacities described above to calculate existing AM and PM peak hour ramp V/C ratios and corresponding LOS values. The freeway ramp analysis presented here differs from the above peak hour intersection analysis in that the ramp analysis here involves the peak hour V/C of the ramp itself, whereas the intersection analysis involves the ICU value of the intersection of the ramp with the arterial street.

To address concerns expressed by Caltrans regarding the performance of ramp intersections in the immediate vicinity of the Proposed Project Site, the freeway ramp intersections at Sand Canyon Avenue/I-5, SR-133/Irvine Boulevard, and SR-133/Trabuco Road interchanges have been analyzed using the HCM methodology in addition to the ICU methodology. The resulting existing conditions peak hour levels of service based on the HCM methodology are summarized in Table 4.2 of the Traffic Study included in Appendix I). As the summary table indicates, each of the ramp intersections generally operates at an acceptable LOS (i.e., LOS D or better).

Figure 5.12-6 illustrates the interchange locations where freeway ramps were analyzed. Freeway ramps are part of the CMP highway network and the acceptability threshold in the CMP is LOS E. Table 4-3 of the Traffic Study included in Appendix I presents a summary of the levels of service at existing Freeway/Tollway Ramps. The freeway ramps generally operate at acceptable service levels during the peak hours under existing traffic conditions, with the exception of the following ramp junctions:

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TRANSPORTATION AND TRAFFIC

- I-5 Southbound Off-Ramp to Bake Parkway

Table 4-3 of the Traffic Study included in Appendix I presents a summary of the levels of service at existing Freeway/Tollway Ramps.

5.12.1.9 Existing Freeway Mainline Levels of Service

To determine existing peak hour operating conditions for mainline freeway segments, peak hour traffic count data was compiled for the freeway system in the traffic analysis study area. The AM and PM peak hour freeway mainline volumes were applied together with the capacities described above for mixed-flow (general purpose) lanes and high-occupancy vehicle (“HOV”) lanes to calculate existing peak hour V/C ratios, by direction, for freeway mainline segments in the study area. When evaluating existing freeway conditions (i.e., based on traffic count data), the V/C and LOS criteria are applicable only in situations where the observed traffic volume occurs in stable flow. When the peak hour V/C ratio on a freeway mainline segment nears 1.0, unstable conditions can occur which may result in a breakdown in traffic flow. This breakdown in flow causes a reduction in capacity (vehicle speeds drop below the speed at which maximum capacity is available), and hence the V/C increases, causing a further reduction in speed. At the same time, the reduction in capacity and increase in V/C causes queue build-up and the stop-and-go conditions can extend for a considerable distance upstream of the problem freeway segment. Furthermore, this occurrence, and its severity (i.e., length of queue), can vary from day to day even when day-to-day fluctuations in traffic volumes are relatively small.

Table 4-3 of the Traffic Study included in Appendix I summarizes existing AM and PM peak hour V/C ratios for freeway mainline segments in the study area. The freeway mainline segments operate at acceptable service levels (LOS “E” or better) during the peak hours under existing traffic conditions, with the exception of the following location:

- I-5 Southbound South of Alicia Pkwy

The LOS results based on V/C indicate measures of demand and are used as a basis for future mainline segment analysis in the Traffic Study. Note that future traffic volumes presented in the Traffic Study represent “demand” and no attempt is made to estimate operating conditions such as discussed here (i.e., only the V/C LOS based on the future demand traffic volume is reported).

5.12.1.10 Planned Circulation System

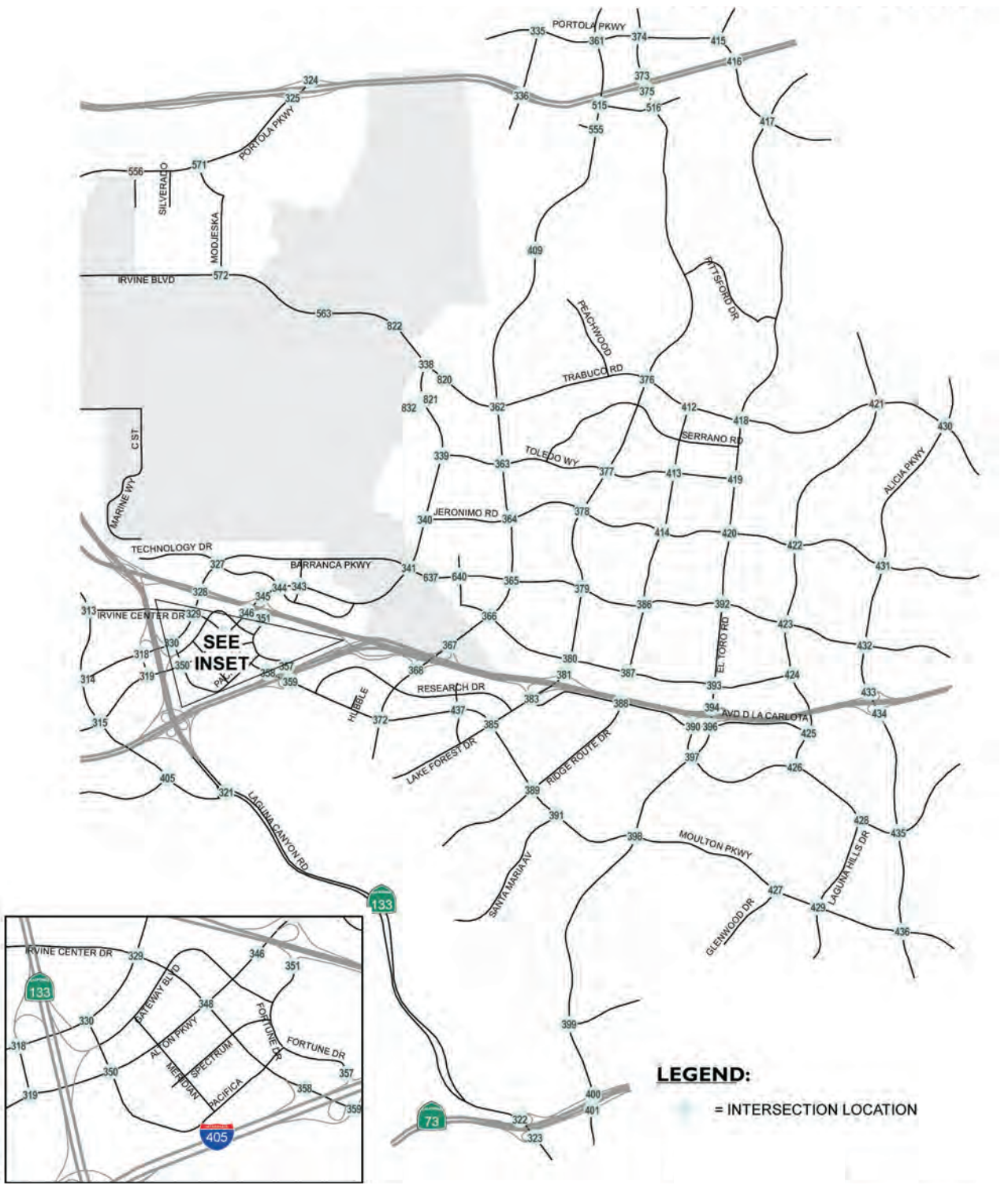
The circulation system that is planned in the traffic analysis study area under year 2015 conditions is illustrated on Figure 5.12-7. On-site roadways within Districts 1 North, 1 South, 4, 7 and 8 are planned to be constructed for the 2012 Modified Project.

Midblock travel lanes on individual segments of the year 2030 roadway network are shown in Figure 5.12-8. The year 2015 and year 2030 circulation systems only assume improvements that are committed for construction (i.e., public agency capital improvement programs, state transportation improvement program, etc.) or would be constructed as part of previously entitled development by 2015 or 2030.

Existing Intersection Location Map



West Study Area

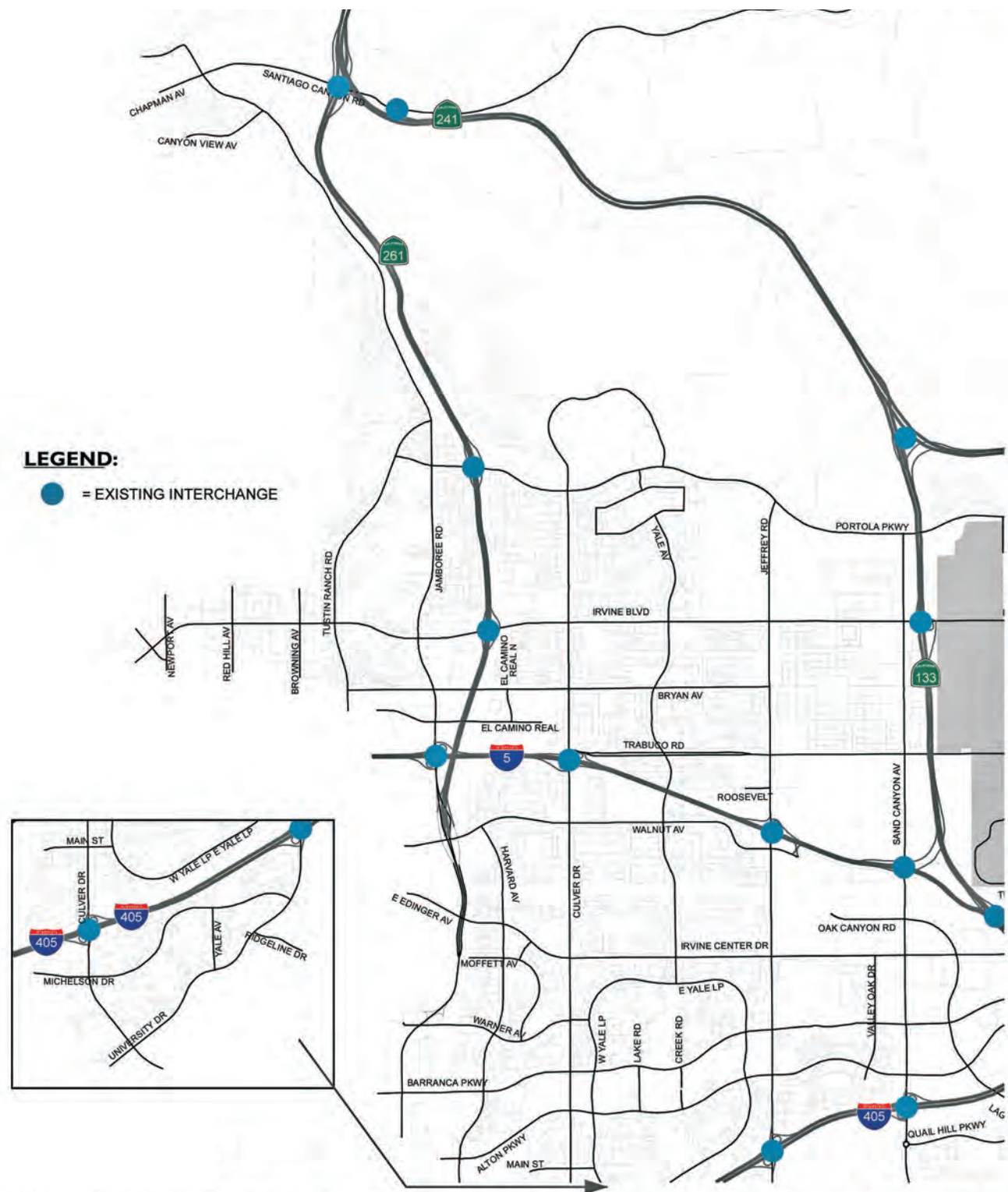


East Study Area

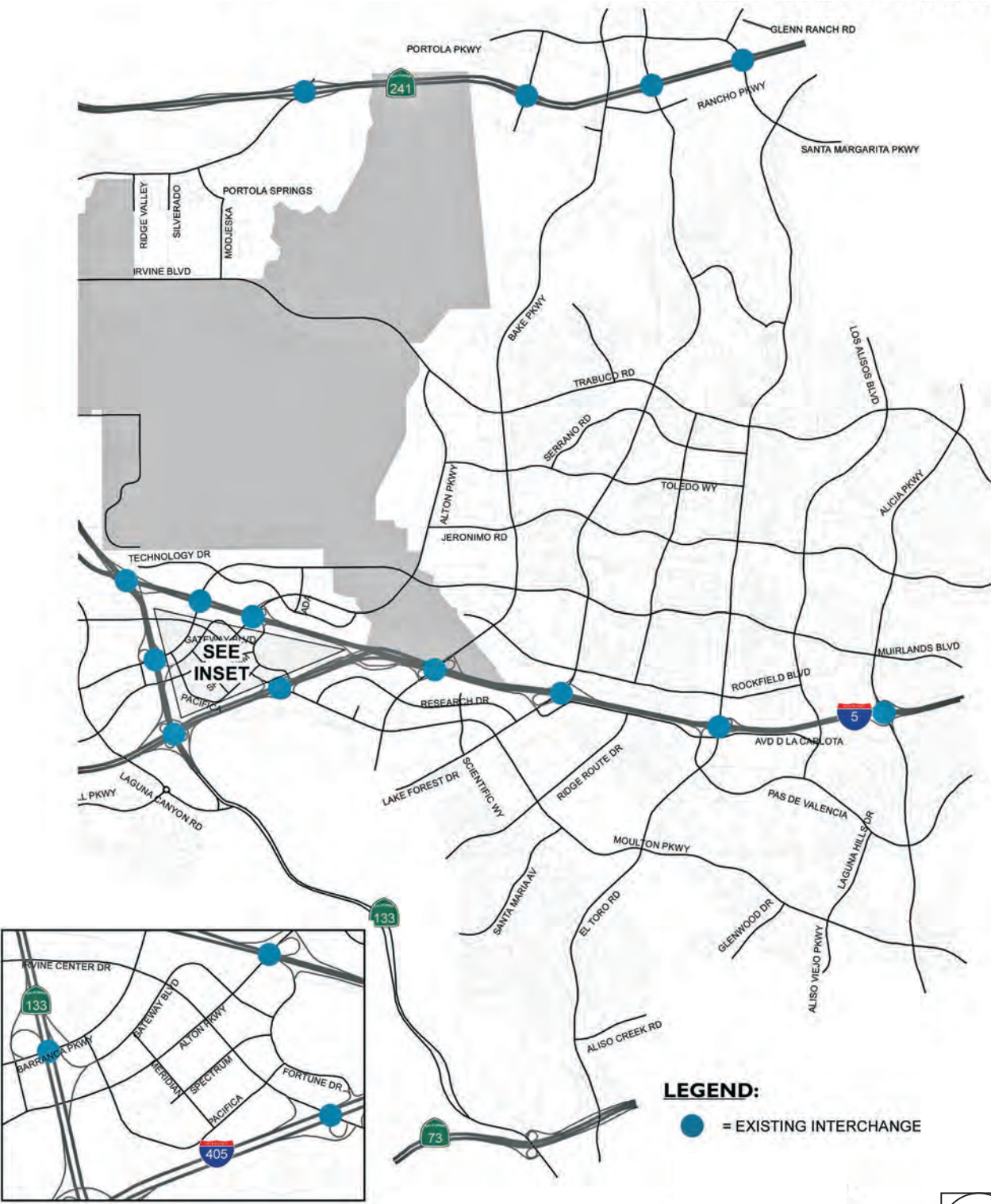
0 6,000
Scale (Feet)



Existing Freeway Interchange Locations



West Study Area



East Study Area

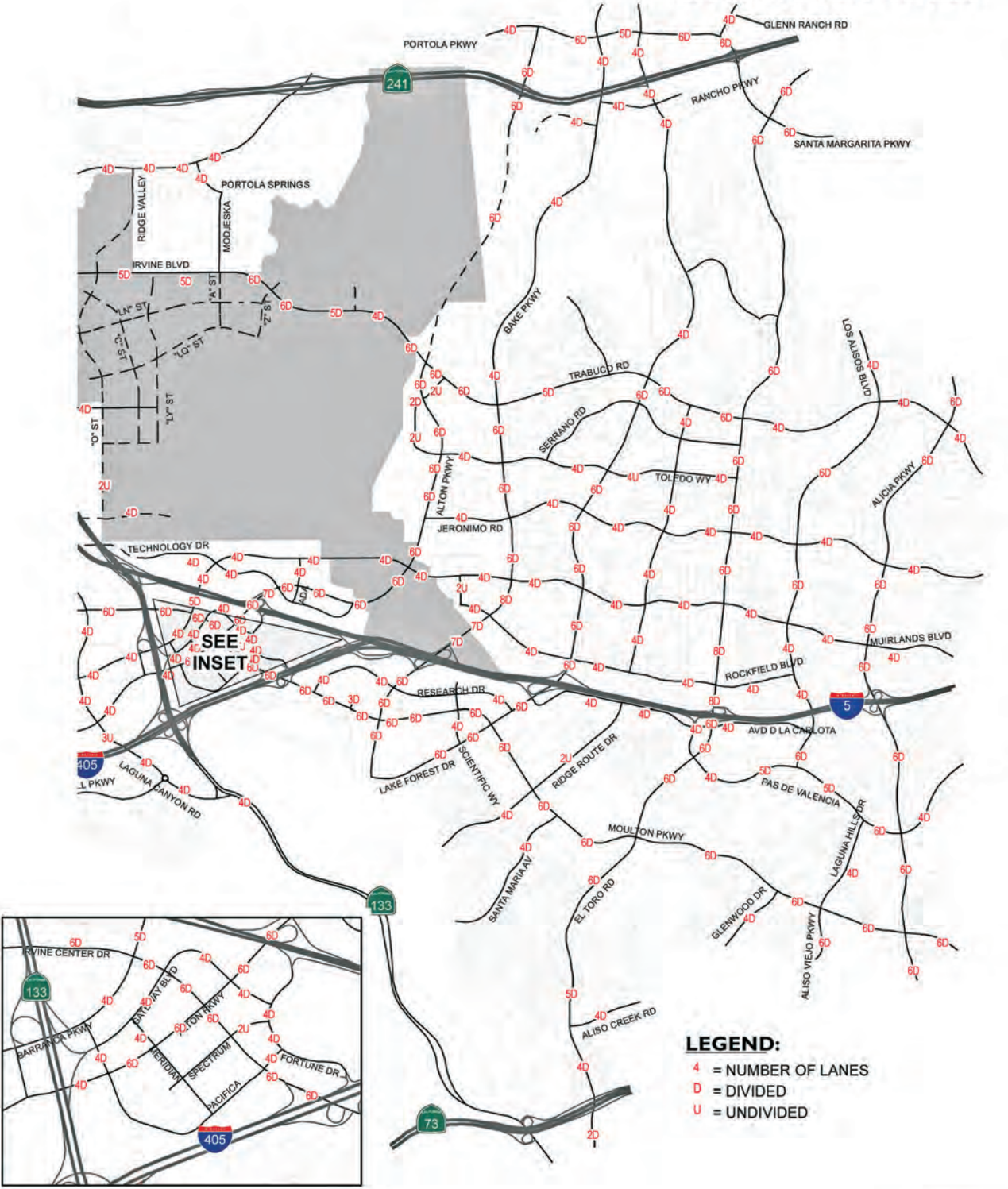


Source: Urban Crossroads 2012
Heritage Fields Project 2012 GPA/ZC SSEIR

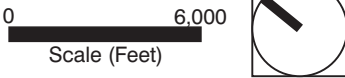
2015 Circulation System



West Study Area



East Study Area

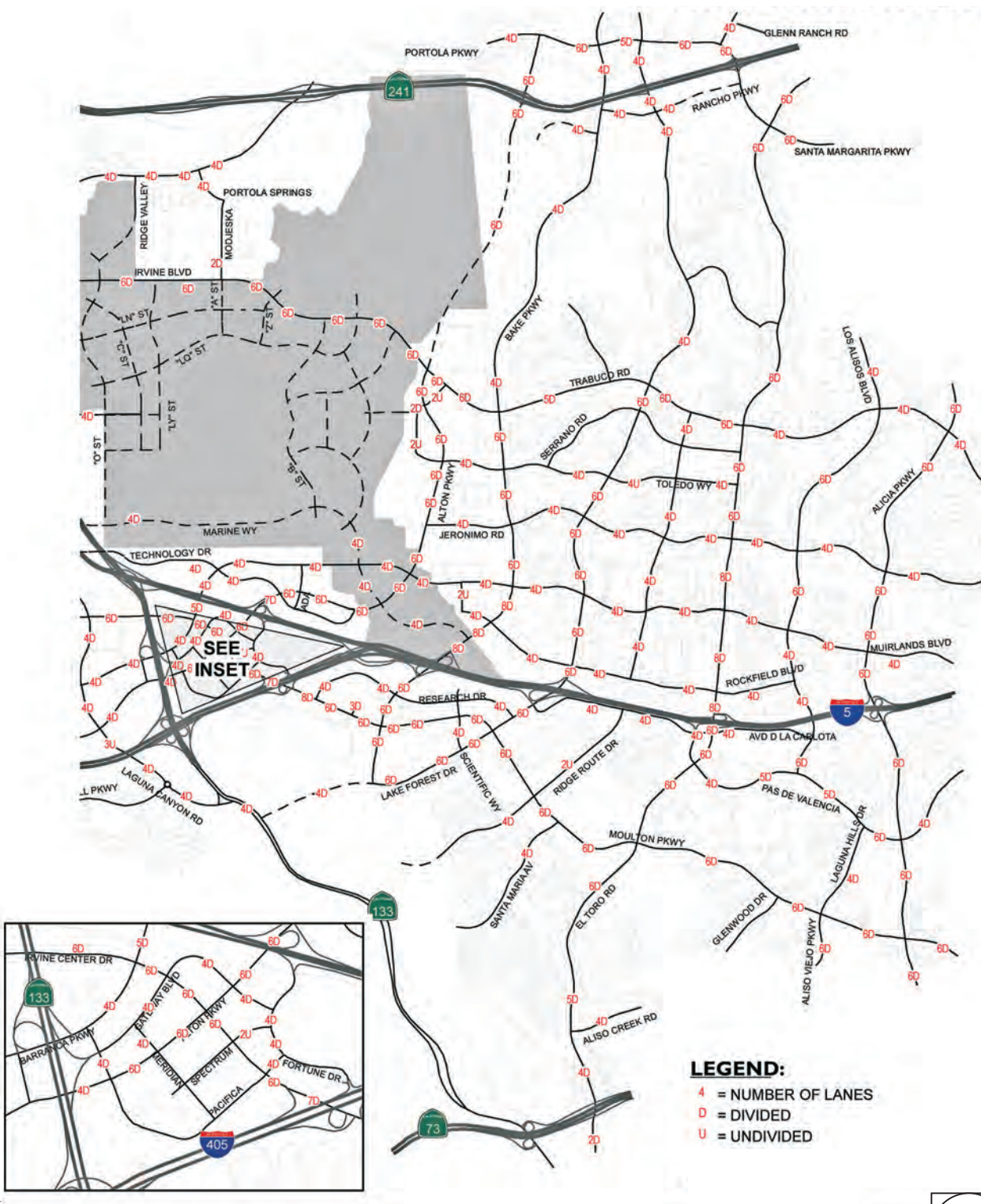


Source: Urban Crossroads 2012
Heritage Fields Project 2012 GPA/ZC SSEIR

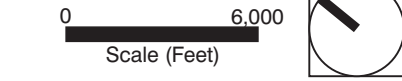
2030 Circulation System



West Study Area

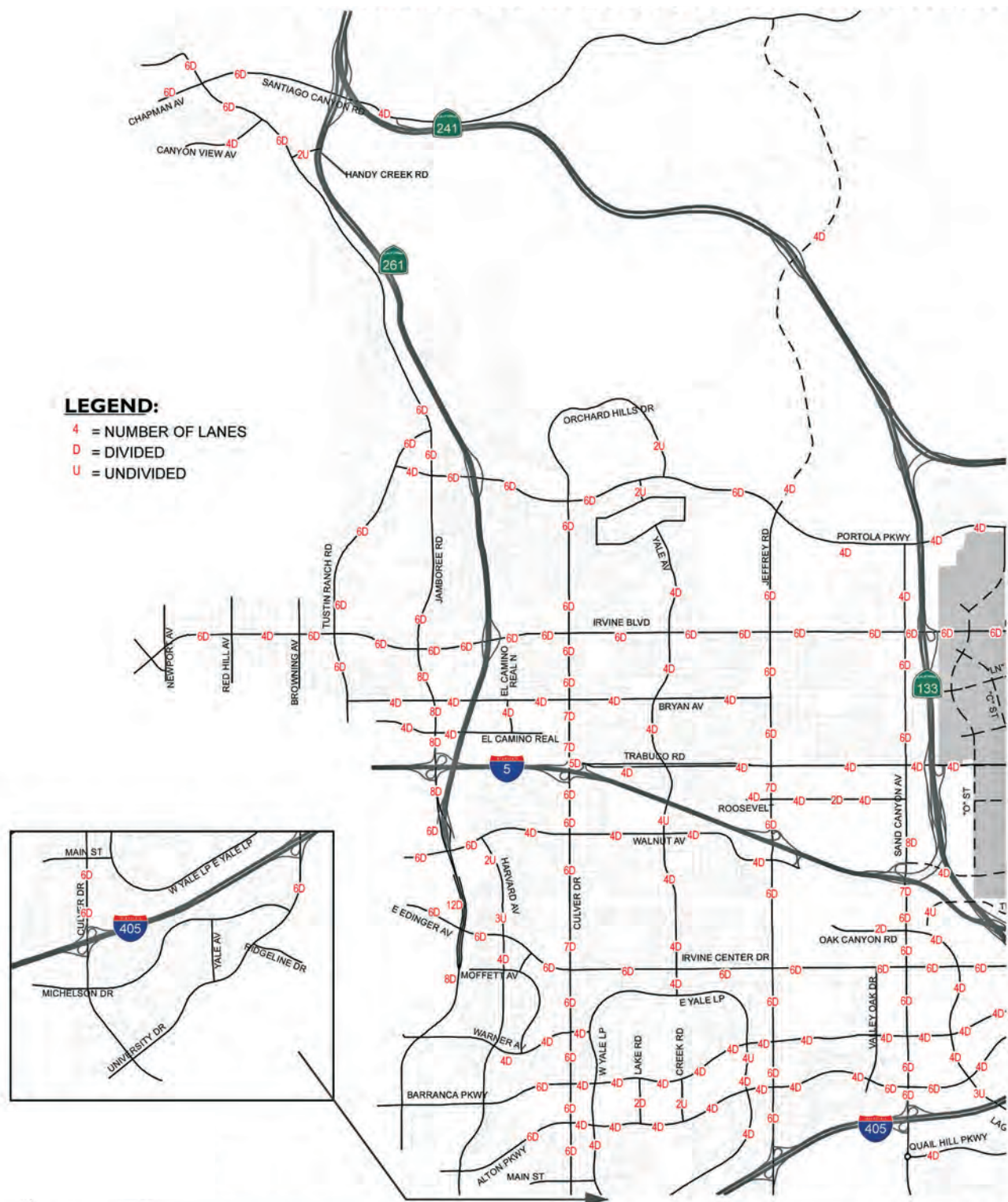


East Study Area

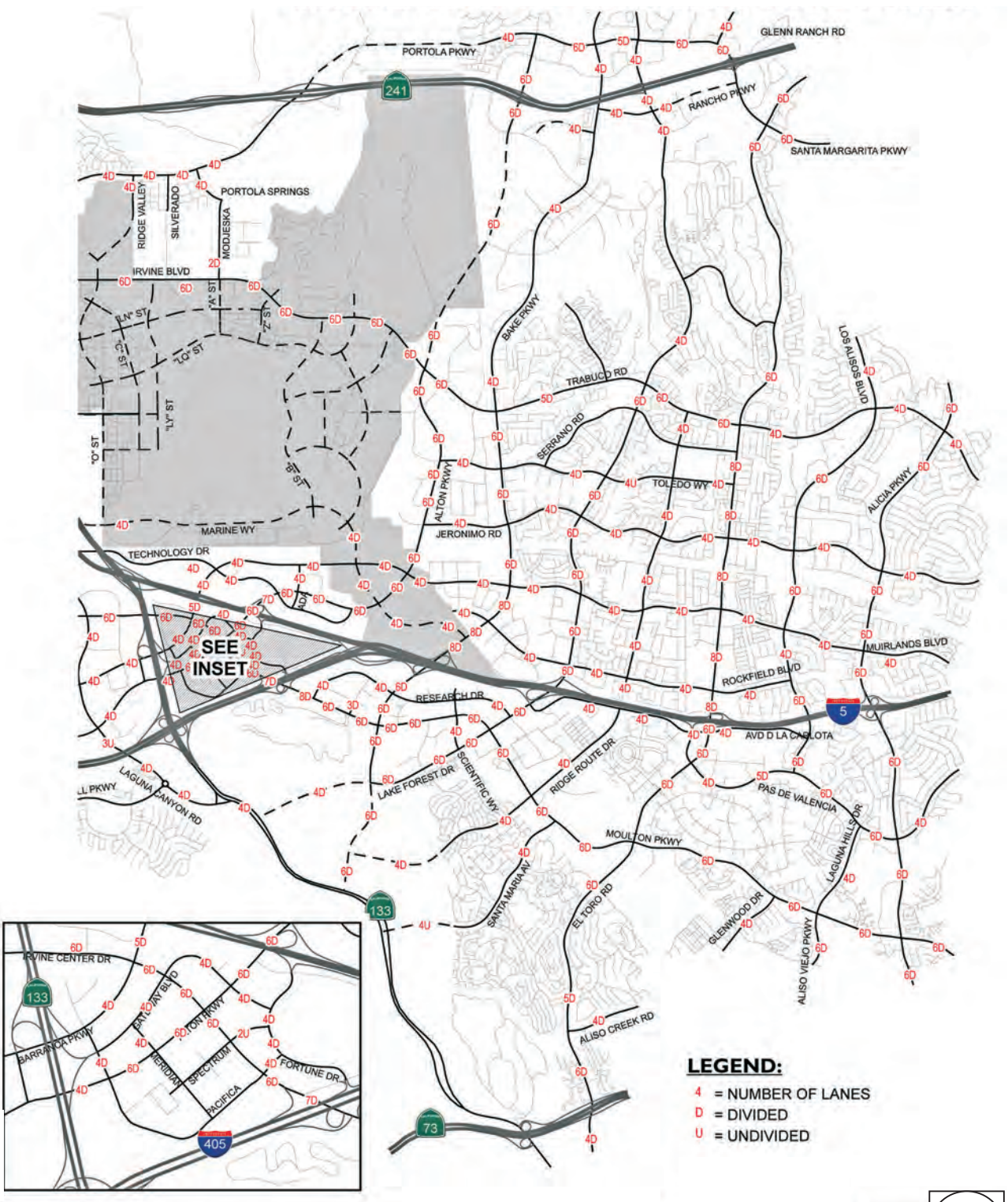


Source: Urban Crossroads 2012
Heritage Fields Project 2012 GPA/ZC SSEIR

General Plan Buildout (Post-2030) Circulation System



West Study Area



East Study Area



Source: Urban Crossroads 2012
Heritage Fields Project 2012 GPA/ZC SSEIR

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The Post-2030 highway network is depicted in Figure 5.12-9. The Post-2030 scenario assumes full buildout of the General Plan Circulation Elements for the City and its neighboring cities as well as the Orange County Master Plan of Arterial Highways (“MPAH”). This includes a number of unfunded, and therefore non-committed, planned circulation system improvements.

Table 4-5 in the Traffic Study (Appendix I) presents the committed roadway improvements for years 2010-2015. Table 4-6 in the Traffic Study lists the improvements that are committed to be in place by 2030, and Table 4-7 in the Traffic Study lists the improvements assumed for Post-2030. Tables 4-8 through 4-10 in the Traffic Study present the intersection committed projects for years 2015, 2030 and Post-2030 which represent the background circulation assumptions for each year.

5.12.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- | | |
|-----|--|
| T-1 | Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. |
| T-2 | Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. |
| T-3 | Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. |
| T-4 | Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). |
| T-5 | Result in inadequate emergency access. |
| T-6 | Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. |

Chapter 8, *Impacts Found Not to Be Significant*, substantiates the City’s determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR) that impacts associated with the following impacts would be less than significant:

- Impact T-3
- Impact T-4
- Impact T-5

Accordingly, these impacts will not be addressed in the following analysis.

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5.12.3 The 2011 Approved Project

The 2011 Certified EIR concluded that with the 2011 Approved Project all intersections and roadway/freeway/tollway/ramp segments would operate at acceptable levels of service with the existing or planned improvements. However, inasmuch as the primary responsibility for approving and/or completing certain improvements located outside of Irvine lies with agencies other than the City (i.e., City of Lake Forest, Laguna Woods, Mission Viejo, County of Orange, and Caltrans), there is the potential that significant impacts may not be fully mitigated if such improvements are not completed for reasons beyond the City's control (i.e., the City cannot undertake or require improvements outside of its jurisdiction). Should that occur, impacts relating to traffic generated by the 2011 Approved Project would remain significant.

5.12.4 Environmental Impacts of the 2012 Modified Project

Project Design Features

The following project design feature applies to the 2012 Modified Project to help to reduce and avoid potential impacts related to traffic.

PDF 12-1 The 2012 Modified Project's optional conversion of non-residential square footage to residential units, if implemented, will be subject to a traffic analysis to assess traffic impacts, if any, due to the specific changes in land use and will include a reduction in allowable Multi-Use intensity in terms of equivalent traffic generation (excluding DB units) based on AM peak, PM peak, and ADT. Conversions to other non-residential uses within the Multi-Use category, if implemented, will also be subject to a traffic analysis to assess traffic impacts, if any, and shall be reflected in terms of equivalent traffic generation based on AM peak, PM peak, and ADT.

The following impact analysis addresses impacts that the Initial Study disclosed as potentially significant impacts of the 2012 Modified Project, as compared to the 2011 Approved Project. The applicable impacts are identified in brackets after the impact statement.

IMPACT 5.12-1: TRIP GENERATION ASSOCIATED WITH THE 2012 MODIFIED PROJECT WOULD NOT IMPACT LEVELS OF SERVICE FOR THE EXISTING AREA ROADWAY SYSTEM, AS COMPARED TO THE APPROVED PROJECT. [IMPACTS T-1 AND T-2]

Impact Analysis:

5.12.4.1 Proposed Trip Generation

Trip generation rates used in the Heritage Fields Project 2012 GPA/ZC Traffic Study are derived from Irvine Traffic Model (ITAM) socio-economic conversion factors, production attraction rates, and time of day trip table factors. ITAM converts production-attraction trip tables to directional origin-destination tables by time period, using Vehicle Trips in Motion factors. Trip rates are responsive to this flow of data processing in ITAM, and they directly account for the resulting travel patterns which are analyzed in the Traffic Study.

5. Environmental Analysis

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The land use and trip generation for the project site for without Project, 2012 Modified Project Option 1, and 2012 Modified Project Option 2 under 2015, 2030, and Post-2030 conditions is summarized in Tables 3-2 to 3-8 of the traffic study. The peak hour and average daily trip generation based on the land use trip rates for the 2012 Modified Project under each of the future timeframes (2015, 2030 and Post-2030) is summarized in Table 5.12-4.

For interim year conditions, the 2012 Modified Project change in allowable uses and intensities involves District 1 South and portions of District 1 North. Within the footprint of those land uses in District 1 North and 1 South which change in either Option 1 or Option 2, the Without Project scenario assumes existing occupied land uses. Outside of the footprint of those land uses which change in District 1 North and 1 South, development assumptions in the current City of Irvine Transportation Analysis Model (ITAM) version 8.4-10 Year 2015 are utilized in this analysis.

Under 2015 conditions, the 2012 Modified Project is forecast to generate 1,911 more AM peak hour trips, 2,263 more PM peak hour trips and 23,623 more daily trips compared to Without Project conditions.

Under 2030/Post-2030 conditions, the 2012 Modified Project with Option 1 or Option 2 is forecast to generate 1,377 more AM peak hour trips, 846 more PM peak hour trips and 9,784 more daily trips compared to 2011 Approved Project (baseline) conditions.

*Table 5.12-4
ITAM Trip Generation Comparison between Without Project (2015)
or 2011 Approved Project (Baseline, 2030 & Post-2030) and
the 2012 Modified Project¹*

<i>Timeframe/Scenario</i>	<i>AM Peak Hour Trips</i>	<i>PM Peak Hour Trips</i>	<i>Average Daily Trips</i>
Year 2015			
Without Project	3,741	3,823	41,272
2012 Modified Project	5,652	6,086	64,895
<i>Difference</i>	<i>1,911</i>	<i>2,263</i>	<i>23,623</i>
Year 2030/Post-2030			
2011 Approved Project (Baseline)	10,902	12,131	127,930
2012 Modified Project	12,279	12,977	137,714
<i>Difference</i>	<i>1,377</i>	<i>846</i>	<i>9,784</i>

Source: Urban Crossroads, 2012.

¹ Trip Generation summaries include trips generated by Density Bonus units which are not subject to the ADT limitations in the zoning code.

Trip distribution patterns for the 2012 Modified Project were developed using the ITAM traffic model and are presented here for each of the future timeframes that were analyzed (2015, 2030 and Post-2030). The 2015, 2030 and Post-2030 trip distribution patterns for the 2012 Modified Project with Option 1 are shown in Exhibits 3-2 through 3-4, and the 2012 Modified Project Option 2 trip distribution patterns are depicted in Exhibits 3-5 through 3-7 of the Traffic Study (Appendix I).

5. Environmental Analysis

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5.12.4.2 Existing-Plus 2012 Modified Project

Existing-Plus-2012 Modified Project Circulation System and ADT Volumes

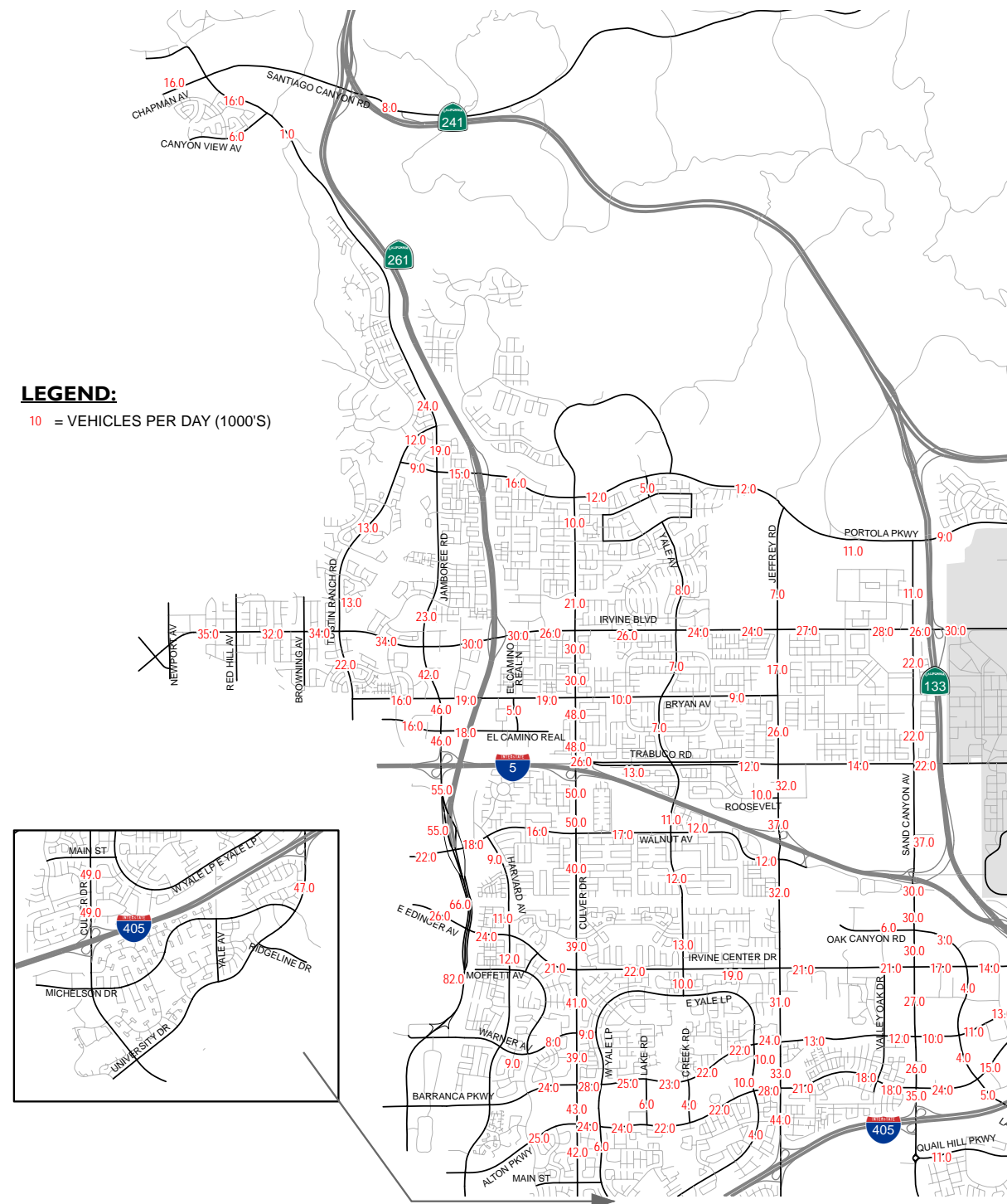
The baseline for this DSSEIR is the 2011 Approved Project, not the existing conditions at the time that the environmental documentation is prepared. Nonetheless, for informational purposes only, the Traffic Study includes the Existing-Plus 2012 Modified Project Option 1, and Existing-Plus 2012 Modified Project Option 2 conditions analyses. These scenarios hypothetically assume that the 2012 Modified Project (Option 1, and Option 2) would be constructed immediately. “Existing” refers to the conditions in the study area at the time the Traffic Study was prepared. The Existing-Plus-2012 Modified Project (Option 1, and Option 2) analyses are a theoretical construct; a project of this scale will obviously not occur instantaneously, and this scenario does not take into account the cumulative growth that would realistically occur during the course of development of the 2012 Modified Project, which would include various on-site and off-site infrastructure improvements in conjunction with progressive growth in the NITM area.

The Existing-Plus-2012 Modified Project average daily traffic (“ADT”) volumes are illustrated in Figures 5.12-10 and 5.12-11, respectively. The Existing-Plus-2012 Modified Project corresponding V/C ratios for Option 1 and Option 2 are illustrated in Figures 5.12-12 and 5.12-13, respectively. Based on the ADT V/C performance criteria and impact thresholds set forth in Table 5.12-1, thirteen (13) arterial roadway segments are potentially impacted by the 2012 Modified Project for Option 1 or Option 2:

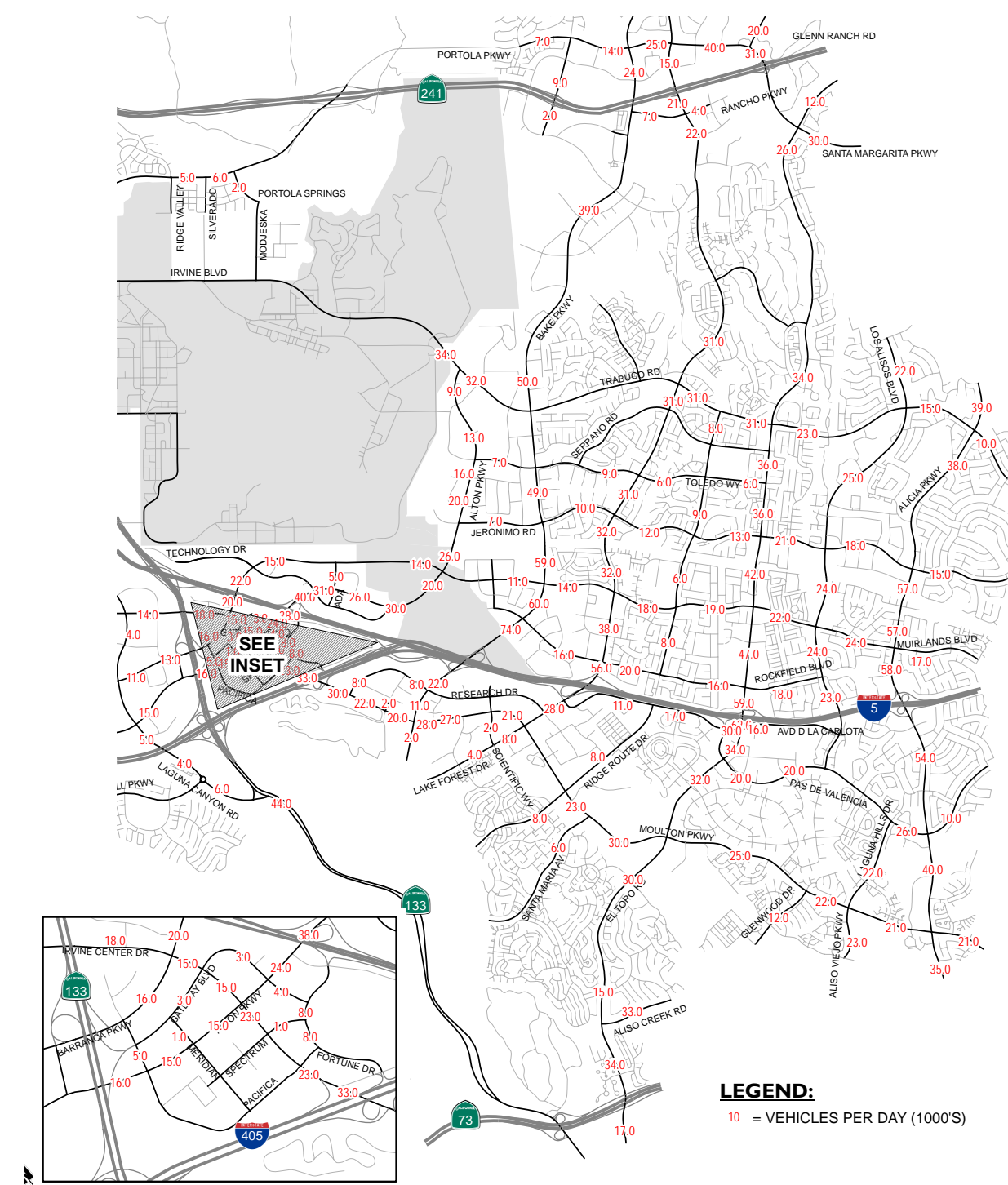
- Avenida Carlota (Paseo de Valencia to El Toro Rd)
- Bake Pkwy (north of Commercentre Dr)
- Bake Pkwy (north of Irvine Bl)
- Bake Pkwy (north of Muirlands Bl)
- Bake Pkwy (south of Rockfield Bl)
- El Toro Rd (south of SR-73)
- Lake Forest Dr (south of Rockfield Bl)
- Irvine Bl (east of SR-133 Northbound Ramps)
- Sand Canyon Av (I-5 Southbound Ramps to Burt Rd)
- Sand Canyon Av (Burt Rd to Oak Cyn/Laguna Cyn Rd)
- University Dr (I-405 SB Ramps to Michelson Dr)
- Culver Dr (Main St to San Leandro)
- Culver Dr (San Leandro to I-5 NB Ramps)

Consistent with the City's traffic study guidelines, these locations are further analyzed by examining peak hour levels of service. The resulting midblock peak hour V/C ratios for the arterial segments under existing-plus-project with 2012 Modified Project with Option 1 and Option 2 conditions are summarized in Table 5-1 of the Traffic Study (Appendix I). As the summary table indicates, arterial roadway segments are forecast to operate at acceptable levels of service during peak hours.

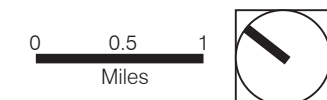
Existing-Plus-2012 Modified Project Option 1 ADT Volumes



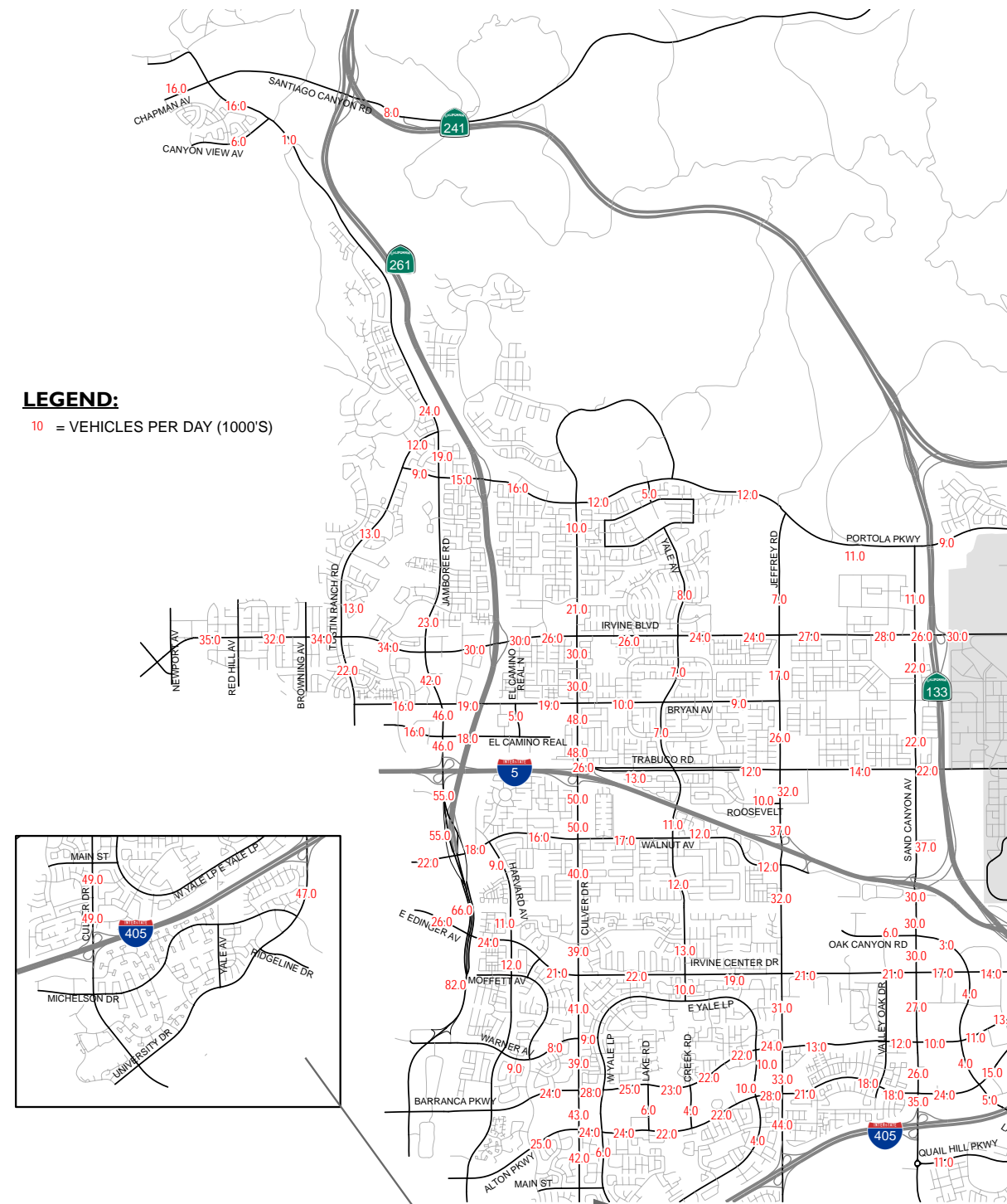
West Study Area



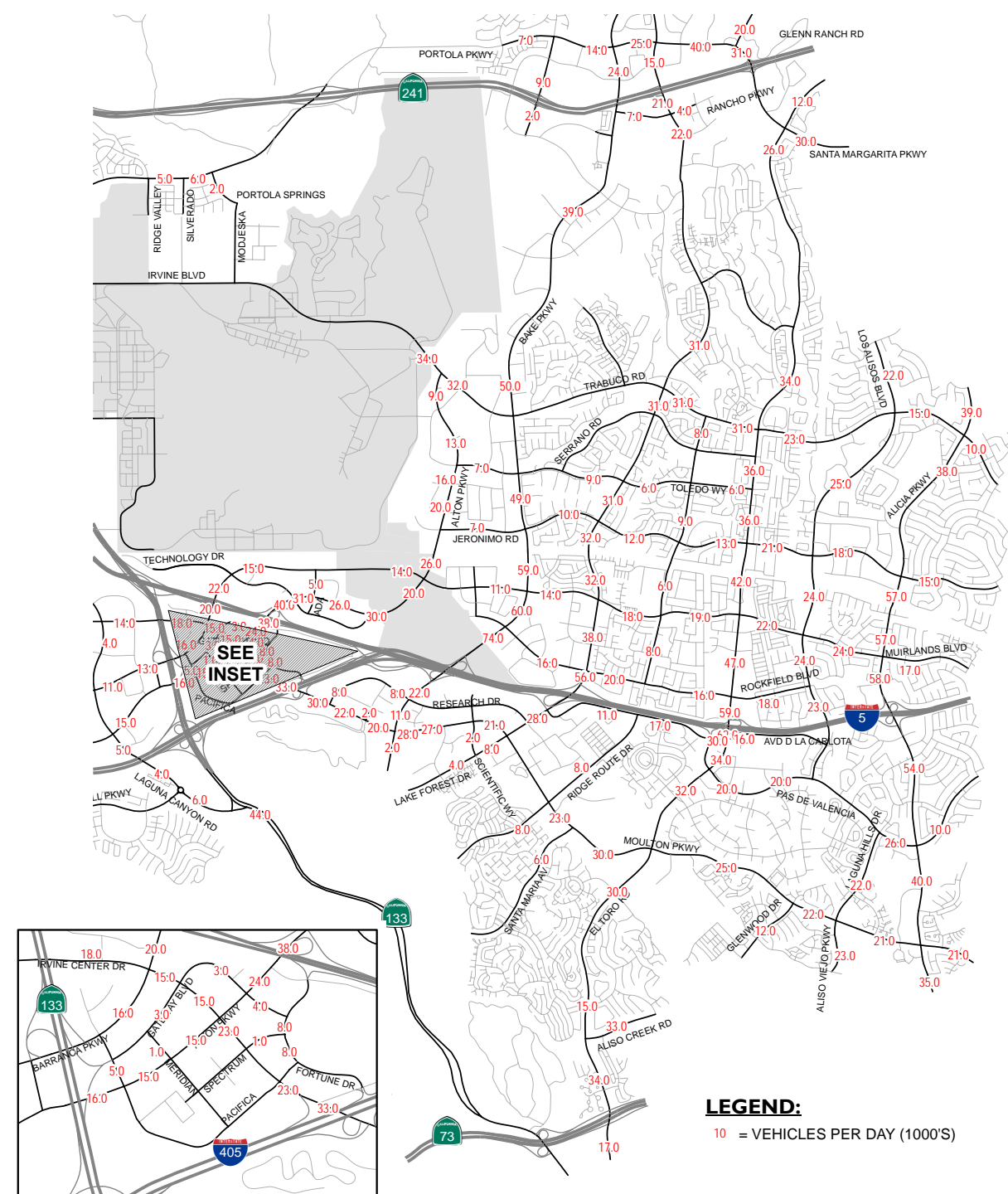
East Study Area



Existing-Plus-2012 Modified Project Option 2 ADT Volumes



West Study Area

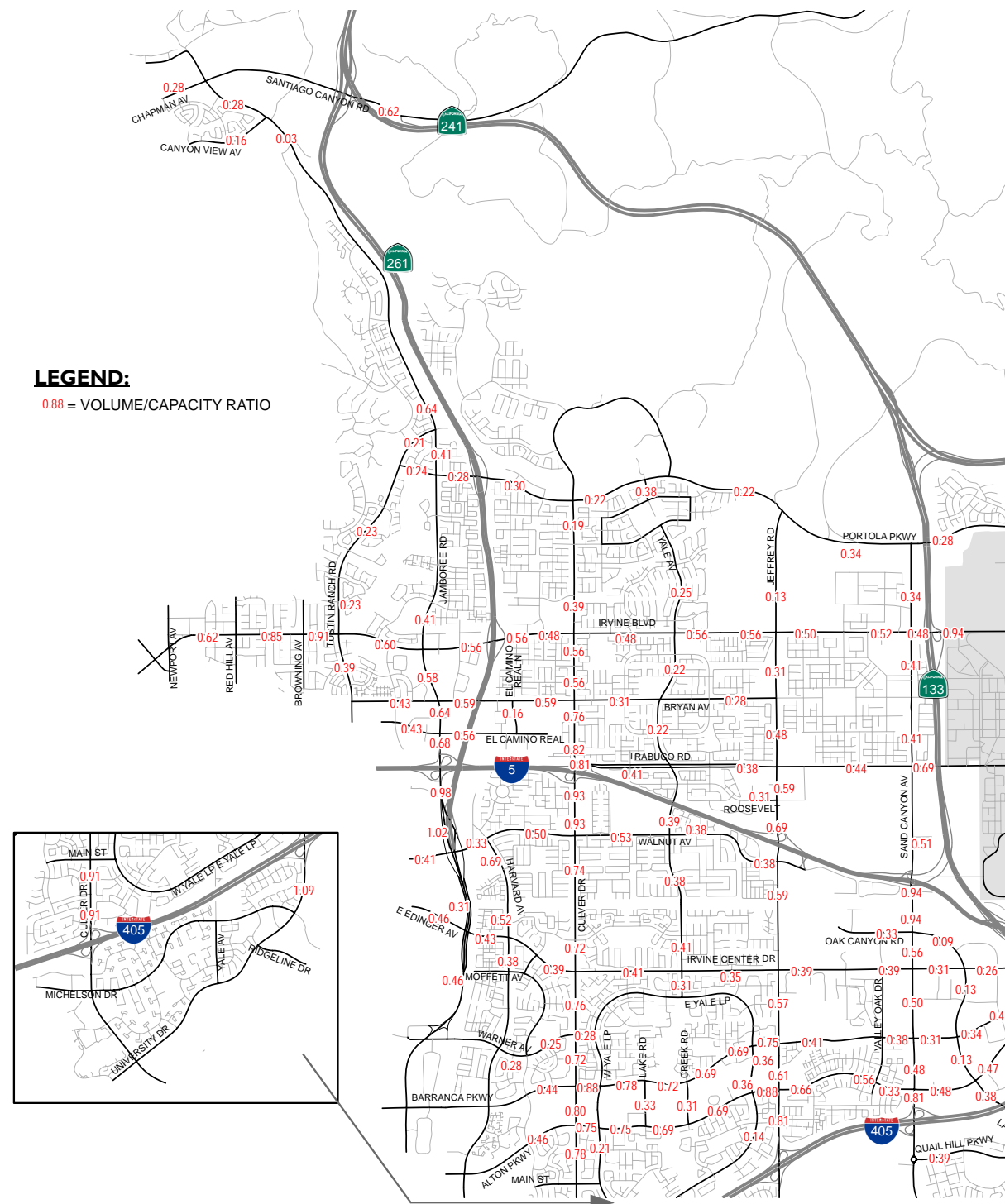


East Study Area

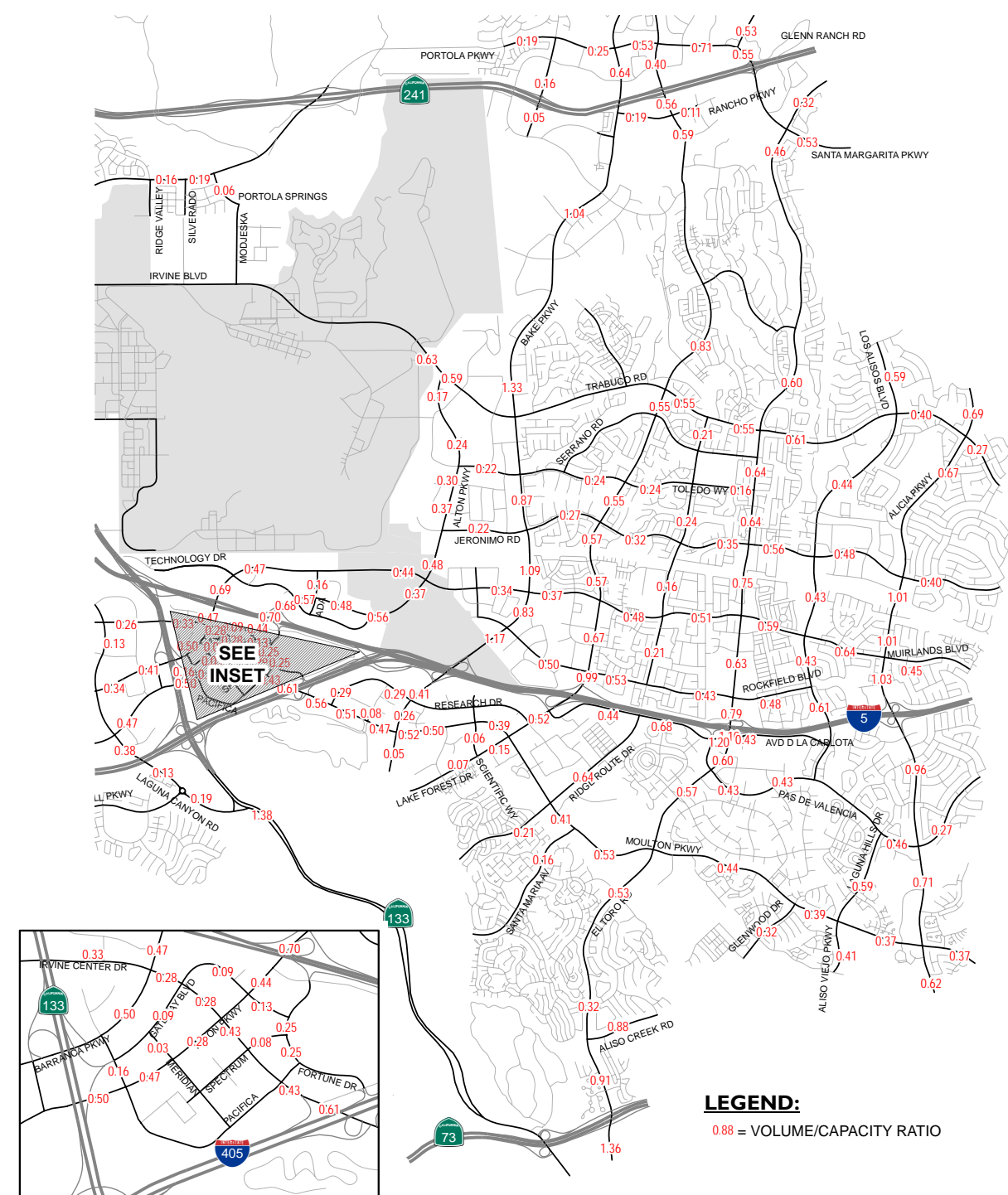
0 0.5 1
Miles



Existing-Plus-2012 Modified Project Option 1 ADT V/C Ratios



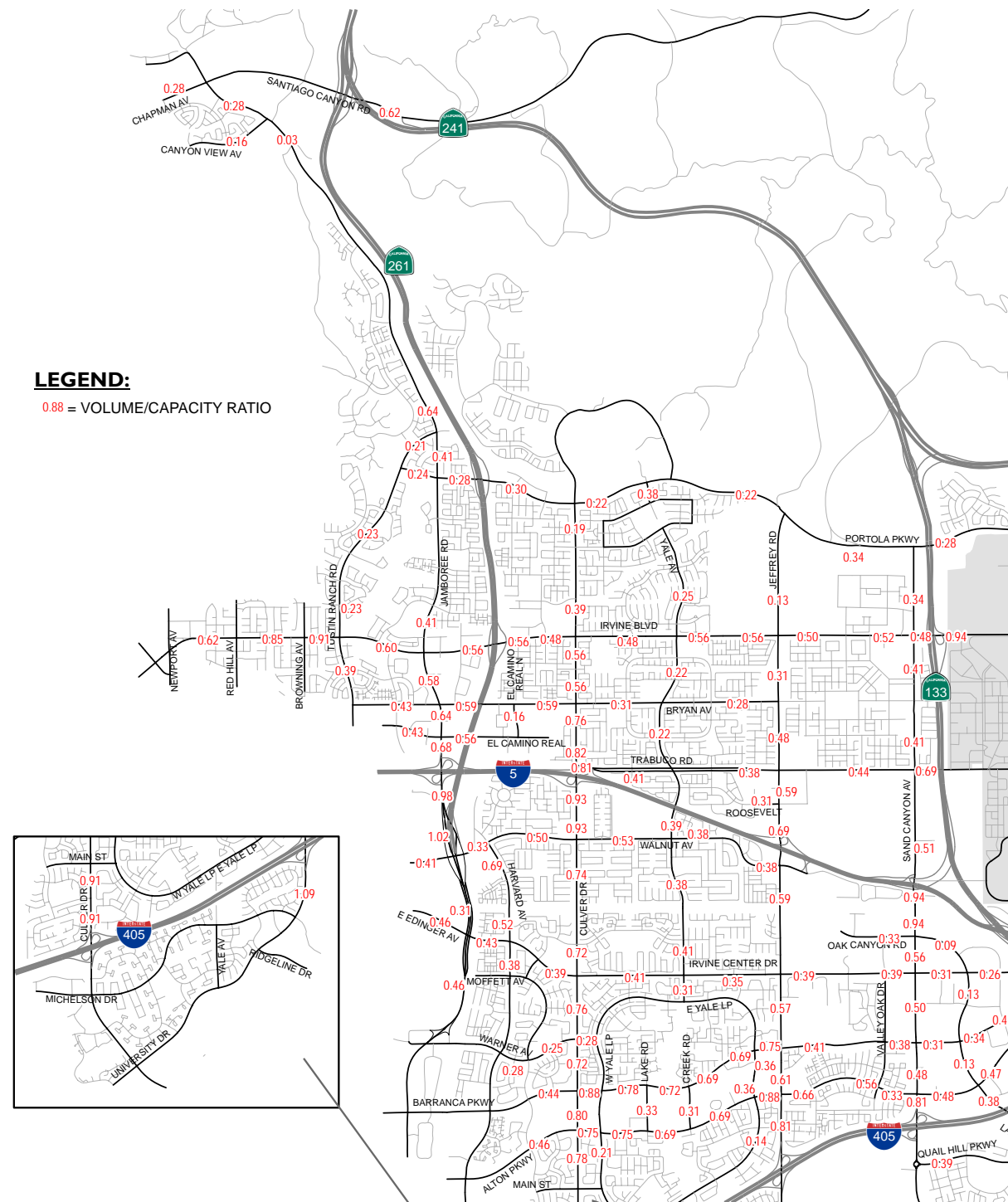
West Study Area



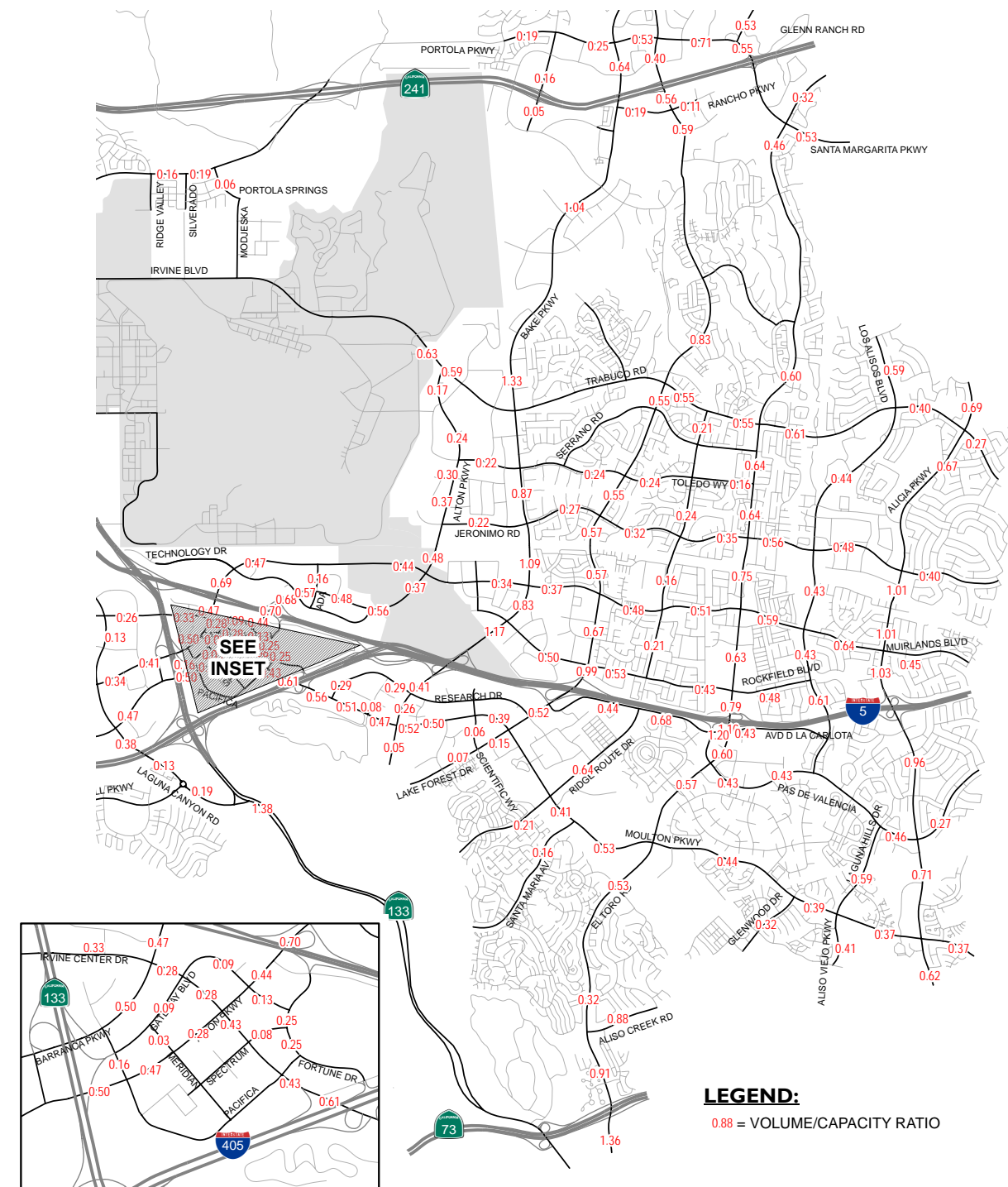
East Study Area



Existing-Plus-2012 Modified Project Option 2 ADT V/C Ratios



West Study Area



East Study Area



5. Environmental Analysis

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Existing-Plus-2012 Modified Project Peak Hour Intersection LOS

Based on the peak hour intersection performance criteria and impact thresholds discussed previously, the following intersection as shown in Table 5.12-5 exceeds adopted impact thresholds with the hypothetical existing-plus-project scenarios:

<i>Table 5.12-5</i>						
<i>Existing-Plus-Project Intersection ICU LOS With 2012 Modified Project</i>						
<i>Project Impact Location – Options 1 and 2</i>						
<i>Intersection</i>		<i>Peak Hour</i>	<i>Without Project</i>		<i>With Project</i>	
			<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
Culver and University	Option 1	PM	0.90	D	0.91	E
	Option 2	PM	0.90	D	0.92	E

Source: Urban Crossroads, 2012.

A summary of Existing-Plus-2012 Modified Project ICU LOS for all study-area intersections with the 2012 Modified Project for Options 1 and 2 is included in Table 5-2 of the Traffic Study. To address concerns expressed by Caltrans regarding the performance of ramp intersections in the immediate vicinity of the 2012 Modified Project, the freeway ramp intersections at Sand Canyon Avenue/I-5 and SR-133/Irvine Boulevard interchanges have been analyzed using the Highway Capacity Manual (HCM) methodology in addition to the ICU methodology. The resulting existing and existing-plus-project peak hour levels of service based on the HCM methodology are summarized in Table 5-4 of the Traffic Study. As the summary table indicates, each of the ramp intersections are forecast to operate at an acceptable LOS (i.e., LOS D or better) under existing-plus-project conditions.

In addition to the peak hour HCM ramp analysis, a queuing analysis was carried out for the Sand Canyon Avenue/I-5 ramps. For the off-ramps at the Sand Canyon/I-5 interchange, the potential for exiting traffic to back up onto the I-5 mainline was evaluated by performing a detailed queuing analysis. The HCM intersection LOS results presented earlier for the Sand Canyon Avenue/I-5 and SR-133/Irvine Boulevard ramp intersections based on the HCM methodology provide estimates of the vehicle queue lengths on the off-ramp approaches at each intersection. The analysis indicates, none of the vehicle queue lengths exceed the physical length of the off-ramps, and therefore traffic exiting at the I-5 at Sand Canyon Avenue off-ramps is not expected to back up onto the I-5 mainline under existing-plus-project conditions. The on-ramps at the Sand Canyon Avenue/I-5 interchanges are metered with queue detectors installed, and the timing of the ramp meters will continue to be coordinated by Caltrans and the City to ensure that on-ramp traffic does not back up through Caltrans ramp intersections onto City arterial roadways.

Existing-Plus-2012 Modified Project Peak Hour Freeway/Tollway Ramp LOS

Existing-Plus-2012 Modified Project (for Option 1 and Option 2) AM and PM peak hour ramp volumes and V/C ratios are shown in Table 5-6 of the Traffic Study (Appendix I). Based on the peak hour ramp performance criteria and impact thresholds previously discussed, one freeway ramp is forecast to exceed

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adopted impact thresholds under the Existing-Plus-2012 Modified Project (e.g., greater than or equal to 0.02, except at CMP locations outside Irvine where it is greater than 0.03) conditions:

- SR-133 Northbound loop on ramp at Barranca Parkway

Existing Plus Project Peak Hour Freeway/Tollway Mainline LOS

Existing-Plus-2012 Modified Project (for Options 1 and 2) AM and PM freeway/tollway mainline peak hour volumes and V/C ratios are shown in Table 5-7 of the Traffic Study (Appendix I) None of the freeway mainline segments are forecasted to exceed adopted impact thresholds under the Existing-Plus-2012 Modified Project conditions.

Existing Plus Project Intersection Impact Location (ICU Methodology)

For the Culver Drive & University Drive intersection impact, the fully funded NITM improvement of converting the northbound de-facto right-turn lane to dual right-turn lanes addresses the hypothetical existing-plus-project intersection peak hour impact (see results in Table 5.12-6 below).

*Table 5.12-6
Existing-Plus-Project Intersection ICU LOS With 2012 Modified Project
Project Impact Location - Options 1 and 2*

<i>Intersection</i>		<i>Peak Hour</i>	<i>Without Project</i>		<i>With Project</i>		<i>With Project and Programmed Improvement</i>	
			<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
Culver and University	Option 1	PM	0.90	D	0.91	E	0.82	D
	Option 2	PM	0.90	D	0.92	E	0.82	D

Source: Urban Crossroads, 2012.

Existing-Plus-2012 Modified Project Freeway Ramp Impact Location

Conditions under the Existing-Plus-2012 Modified Project scenario exceed adopted impact thresholds at one freeway interchange:

- SR-133 northbound loop on-ramp at Barranca Parkway

This ramp improvement will be funded on a NITM methodology fair share basis. The improvement that would address this hypothetical existing-plus-project impact scenario is to convert the HOV preferential lane to a second metered mixed-flow lane. With this improvement, the SR-133 northbound loop on-ramp from Barranca Parkway would operate at LOS B with 2012 Modified Project Option 1 or Option 2 (as demonstrated in Table 5-9 of the Traffic Study, provided in Appendix I).

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5.12.4.3 Interim Year 2015 Traffic Impacts with 2012 Modified Project

The following sub-sections summarize the resulting Year 2015 traffic conditions for the various components of the study area circulation system including arterial roads and intersections, freeway/tollway mainline segments and freeway/tollway ramps without and with the 2012 Modified Project Option 1 and Option 2 scenarios.

Interim Year 2015 Circulation System and Average Daily Traffic Volumes, with 2012 Modified Project Option 1

The Year 2015 with 2012 Modified Project Option 1 average daily traffic (ADT) volumes and corresponding volume/capacity (V/C) ratios are illustrated in Figures 5.12-14 and 5.12-15, respectively.

Based on the ADT and V/C performance criteria and impact thresholds, the following two (2) arterial roadway segments are potentially impacted by the 2012 Modified Project Option 1:

- Irvine Bl (west of A-02 St)
- Irvine Bl (east of A-02 St)

Consistent with the City's traffic study guidelines, these locations are further analyzed by examining peak hour levels of service. The resulting midblock peak hour V/C ratios for the arterial segments under Year 2015 conditions 2012 Modified Project Option 1 are summarized in Table 6-1 of the Traffic Study (Appendix I). As the summary table indicates, all arterial roadway segments are forecast to operate at acceptable levels of service during the peak hour, therefore none of the arterial segments exceed the adopted thresholds.

Interim Year 2015 Peak Hour Intersection Levels of Service with 2012 Modified Project Option 1

For the 2012 Modified Project Option 1, Year 2015 AM and PM peak hour ICU results for the intersections illustrated in Figure 5.12-16 that are part of the study area are summarized in Table 6-2 of the Traffic Study. Actual turn volumes, lane geometrics and ICU calculation worksheets for the this scenario are included in Appendix 6.2 of the Traffic Study. Based on the peak hour intersection performance criteria and impact thresholds, none of the intersections are forecast to exceed adopted impact thresholds with the 2012 Modified Project Option 1 based on Year 2015 conditions.

As previously stated, to address concerns expressed by Caltrans regarding the performance of ramp intersections in the immediate vicinity of the Proposed Project Site, the freeway ramp intersections at Sand Canyon Avenue/I-5 and SR-133/Irvine Boulevard interchanges have been analyzed using the HCM methodology in addition to the ICU methodology. The resulting Year 2015 Without Project and Year 2015 2012 Modified Project peak hour levels of service based on the HCM methodology are summarized in Table 6-3 of the Traffic Study (HCM intersection LOS calculation worksheets are included in Appendix 6.3 of the Traffic Study). As the summary table indicates, each of the ramp intersections are forecast to operate at an acceptable LOS (i.e., LOS D or better) under the Year 2015 for the 2012 Modified Project Option 1 conditions.

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In addition to the peak hour HCM ramp analysis, a queuing analysis was carried out for the Sand Canyon Avenue/I-5 freeway ramps. For the off-ramps at the Sand Canyon/I-5 interchange, the potential for exiting traffic to back up onto the I-5 mainline was evaluated by performing a detailed queuing analysis. The HCM intersection LOS results presented earlier for the Sand Canyon Avenue/I-5 and SR-133/Irvine Boulevard ramp intersections based on the HCM methodology provide estimates of the vehicle queue lengths on the off-ramp approaches at each intersection (see Table 6-6 of the Traffic Study). Table 6-4 of the Traffic Study summarizes the longest 95th percentile queue length at each off-ramp under Year 2015 peak hour conditions for the 2012 Modified Project Option 1 (HCM queuing analysis calculation worksheets are included in Appendix 6.4 of the Traffic Study). As the summary table indicates, none of the vehicle queue lengths exceed the physical length of the off-ramps, and therefore traffic exiting at the I-5 at Sand Canyon Avenue off-ramps is not expected to back up onto the I-5 mainline under this condition. The on-ramps at the Sand Canyon Avenue/I-5 interchanges are metered with queue detectors installed, and the timing of the ramp meters will continue to be coordinated by Caltrans and the City.

Interim Year 2015 Peak Hour Freeway/Tollway Ramp Levels of Service, with 2012 Modified Project Option 1

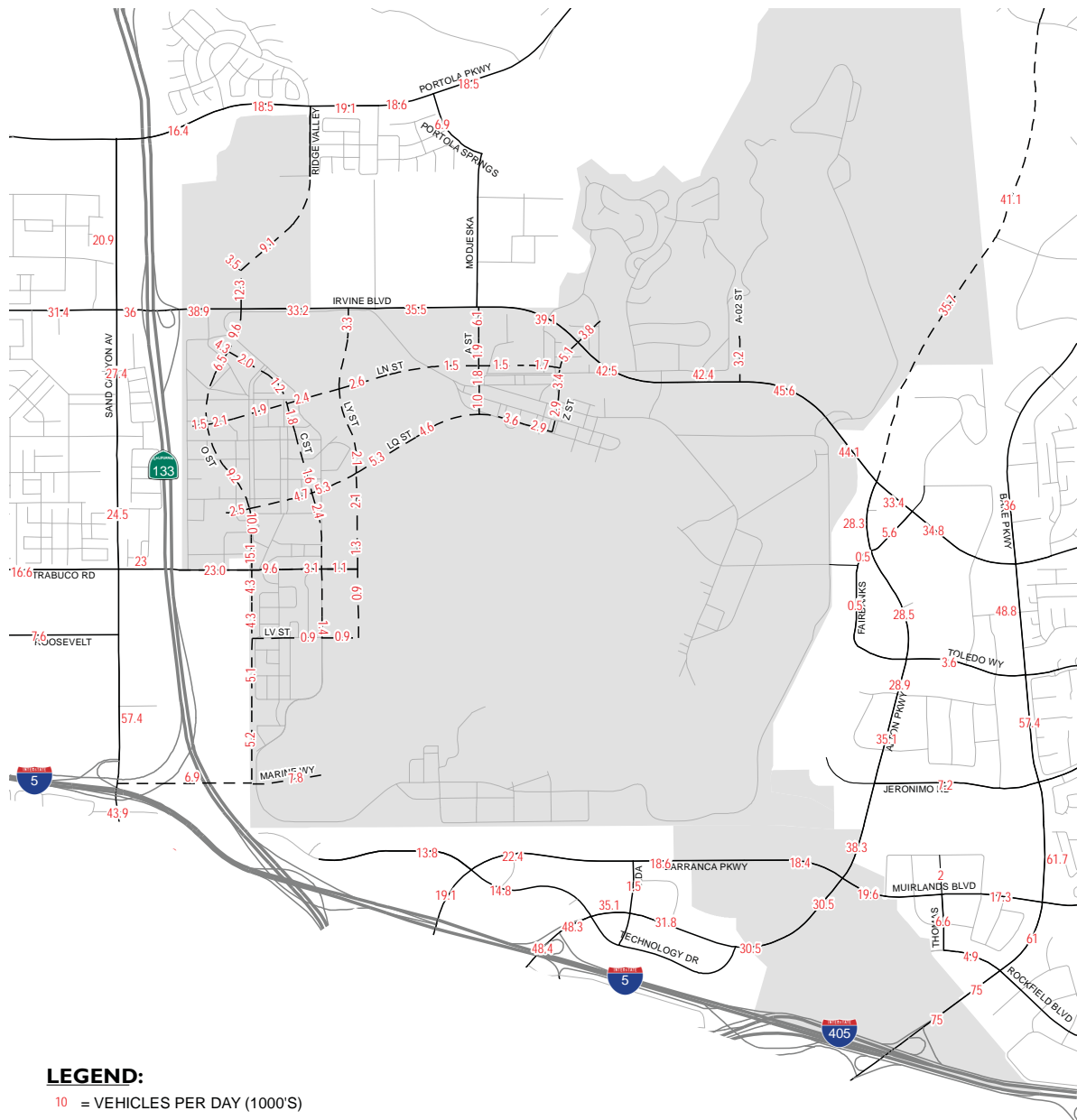
Figure 5.12-17 illustrates the interchange locations where freeway/tollway ramps were analyzed based on Year 2015 conditions. Year 2015 Without Project and Year 2015 with the 2012 Modified Project Option 1 AM and PM peak hour freeway/tollway ramp volumes and V/C ratios are summarized in Table 6-5 of the Traffic Study. Based on the peak hour freeway/tollway ramp performance criteria and impact thresholds presented earlier in this section, none of the freeway ramps are forecasted to exceed the adopted impact thresholds (e.g., greater than or equal to 0.02, except at CMP locations outside Irvine where it is greater than 0.03) under Year 2015 for the 2012 Modified Project Option 1 conditions.

Interim Year 2015 Peak Hour Freeway/Tollway Mainline Levels of Service, with 2012 Modified Project Option 1

Year 2015 Without Project and 2015 with the 2012 Modified Project Option 1 AM and PM freeway/tollway mainline peak hour volumes and V/C ratios are summarized in Table 6-6 of the Traffic Study. Based on the peak hour mainline performance criteria and impact thresholds, none of the freeway mainline segments are forecasted to exceed adopted impact thresholds (e.g., greater than 0.03) under Year 2015 with 2012 Modified Project Option 1 conditions.

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Year 2015 ADT Volumes with 2012 Modified Project Option 1 (1 of 2)



Project Area

0 1,500 3,000
Scale (Feet)

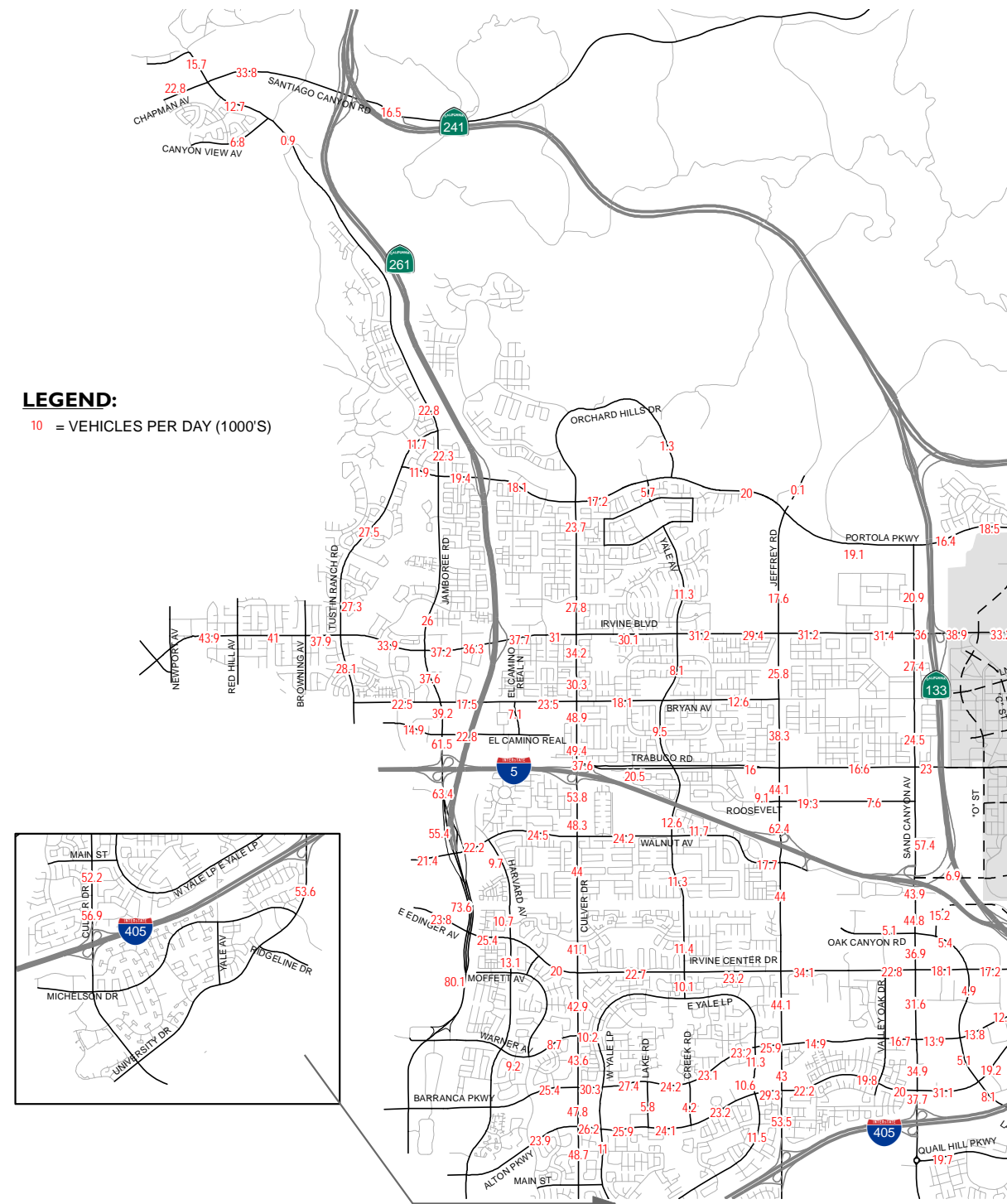


Source: Urban Crossroads 2012

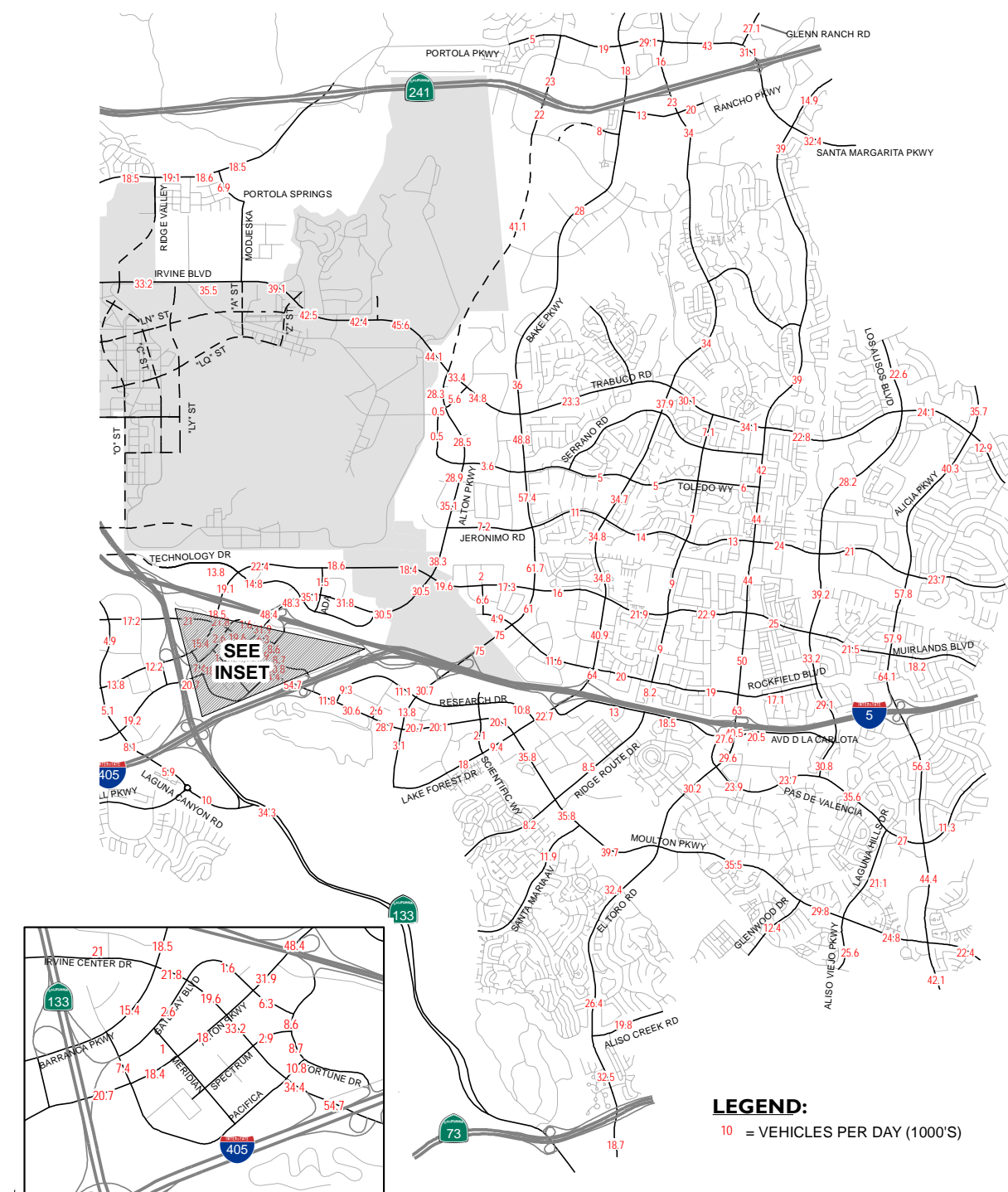
Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-14**

Year 2015 ADT Volumes with 2012 Modified Project Option 1 (2 of 2)



West Study Area

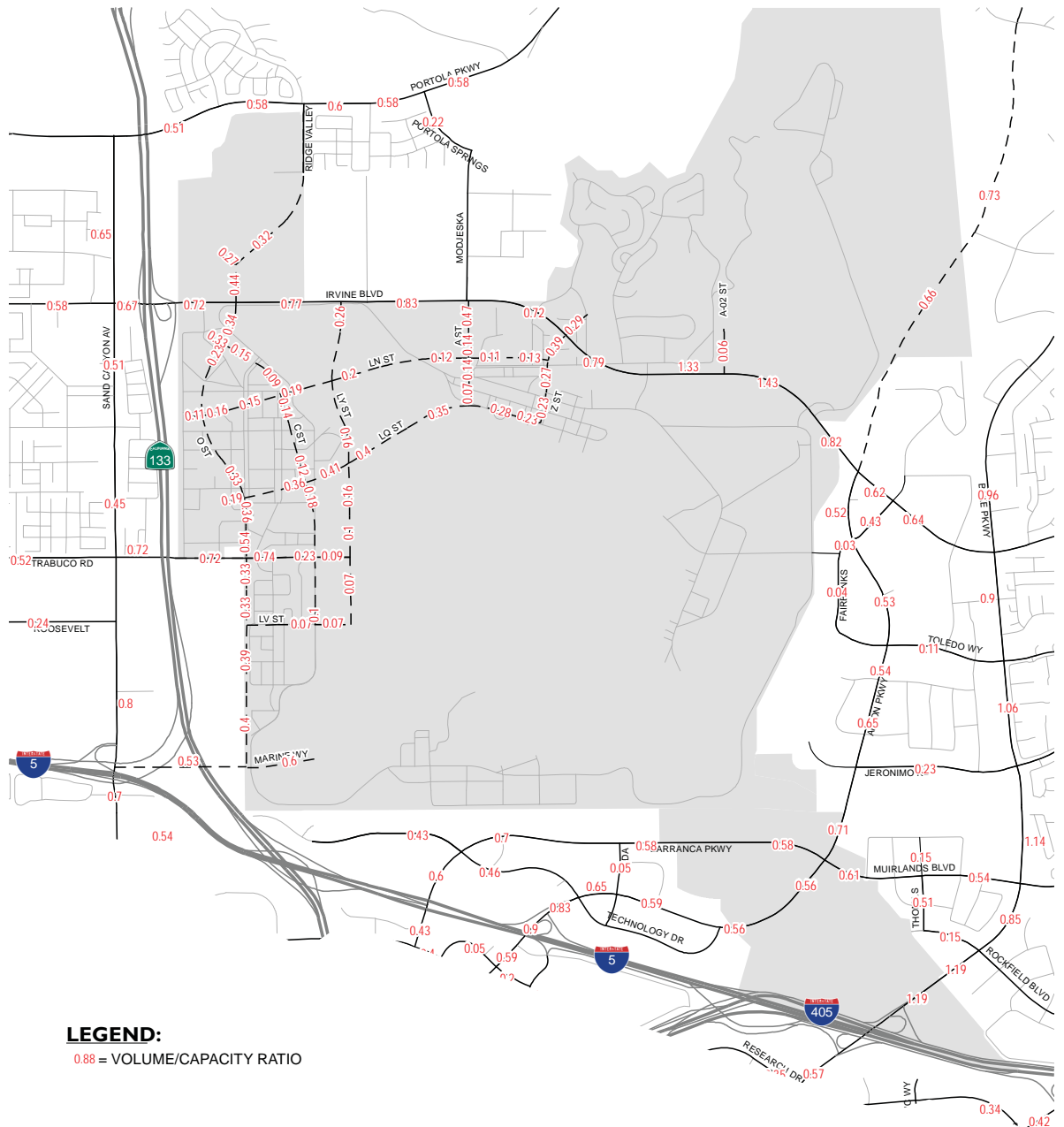


East Study Area



5. Environmental Analysis

Year 2015 ADT V/C Ratios with 2012 Modified Project Option 1 (1 of 2)



Project Area

0 1,500 3,000
Scale (Feet)

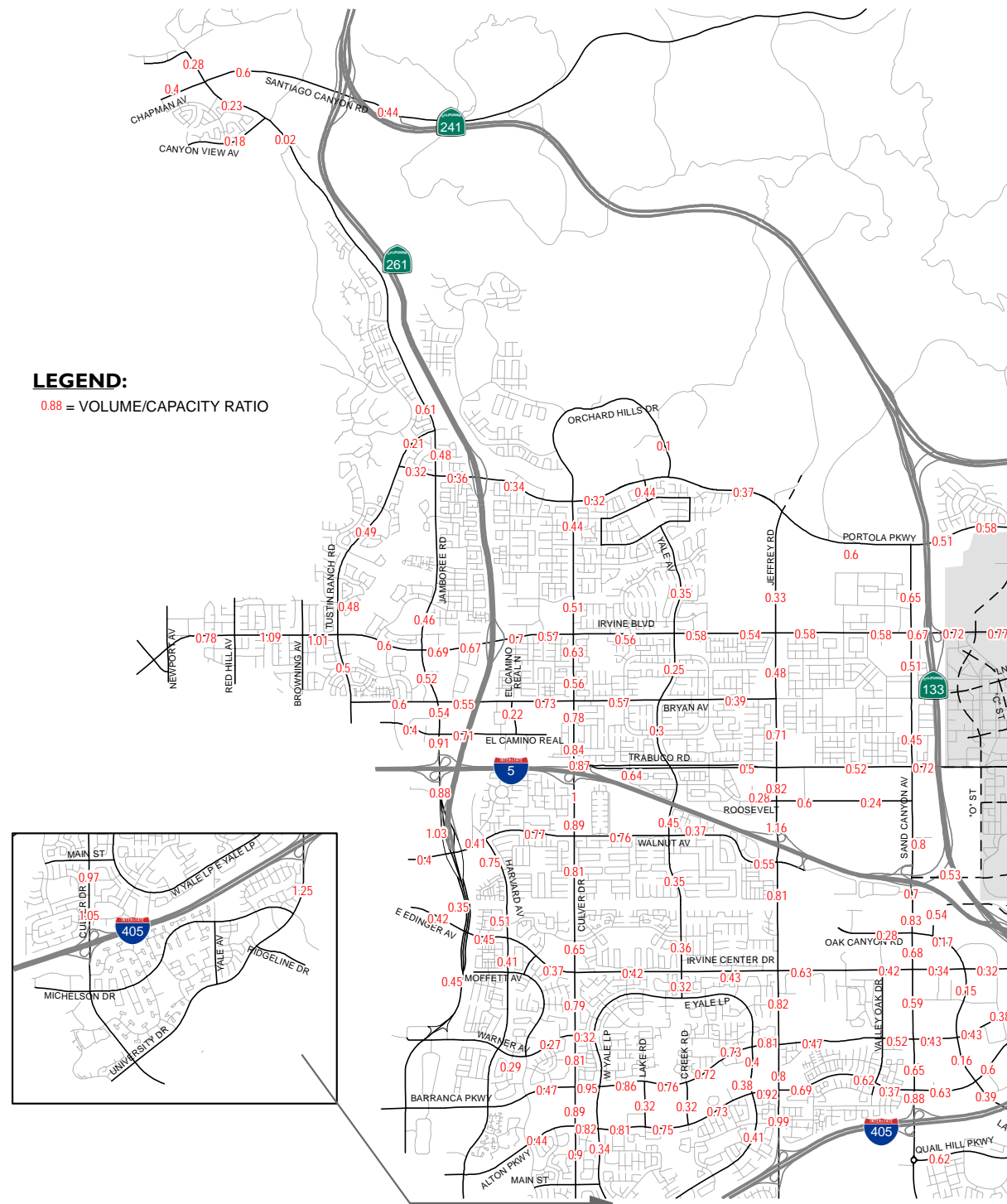


Source: Urban Crossroads 2012

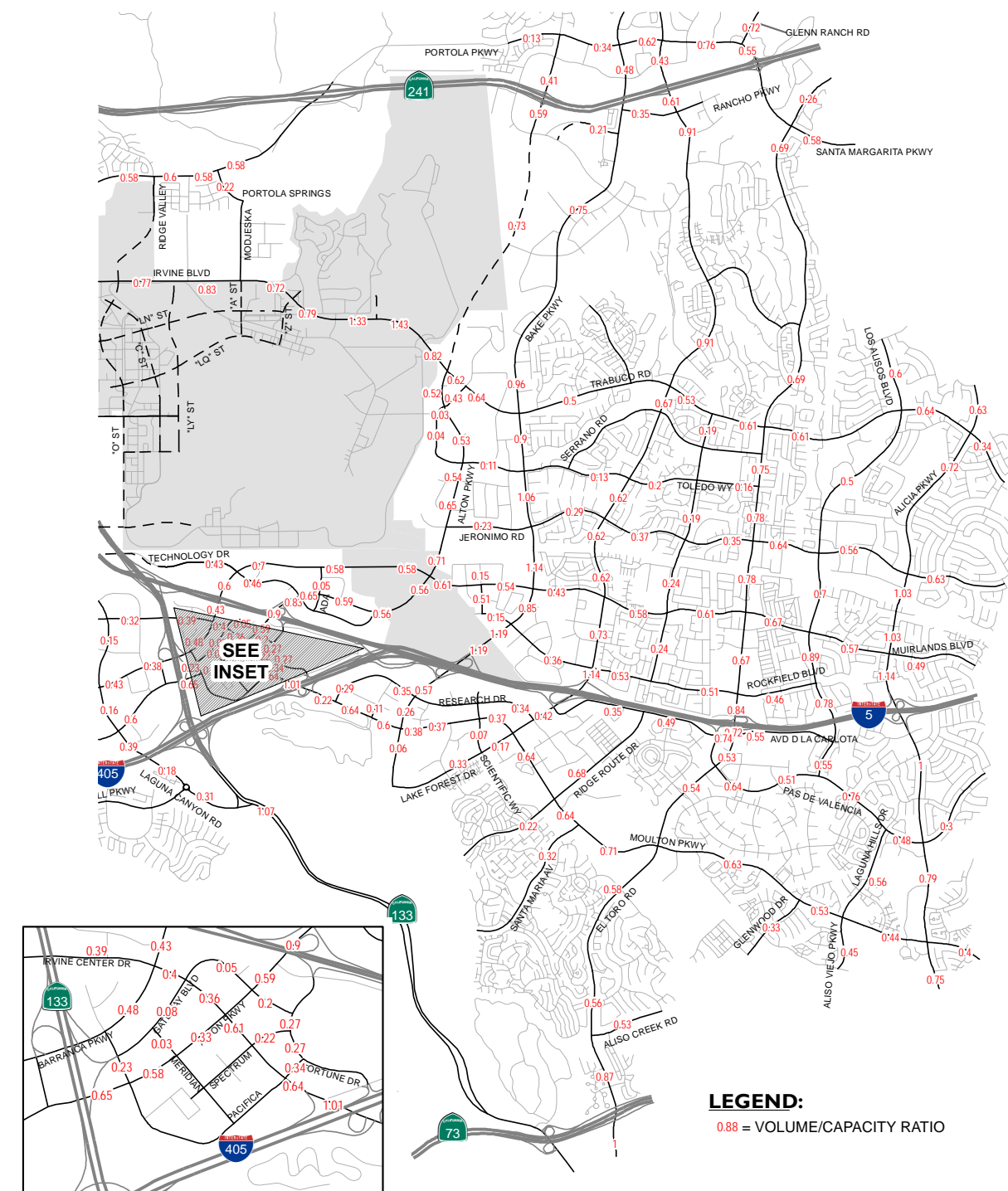
Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-15**

Year 2015 ADT V/C Ratios with 2012 Modified Project Option 1 (2 of 2)



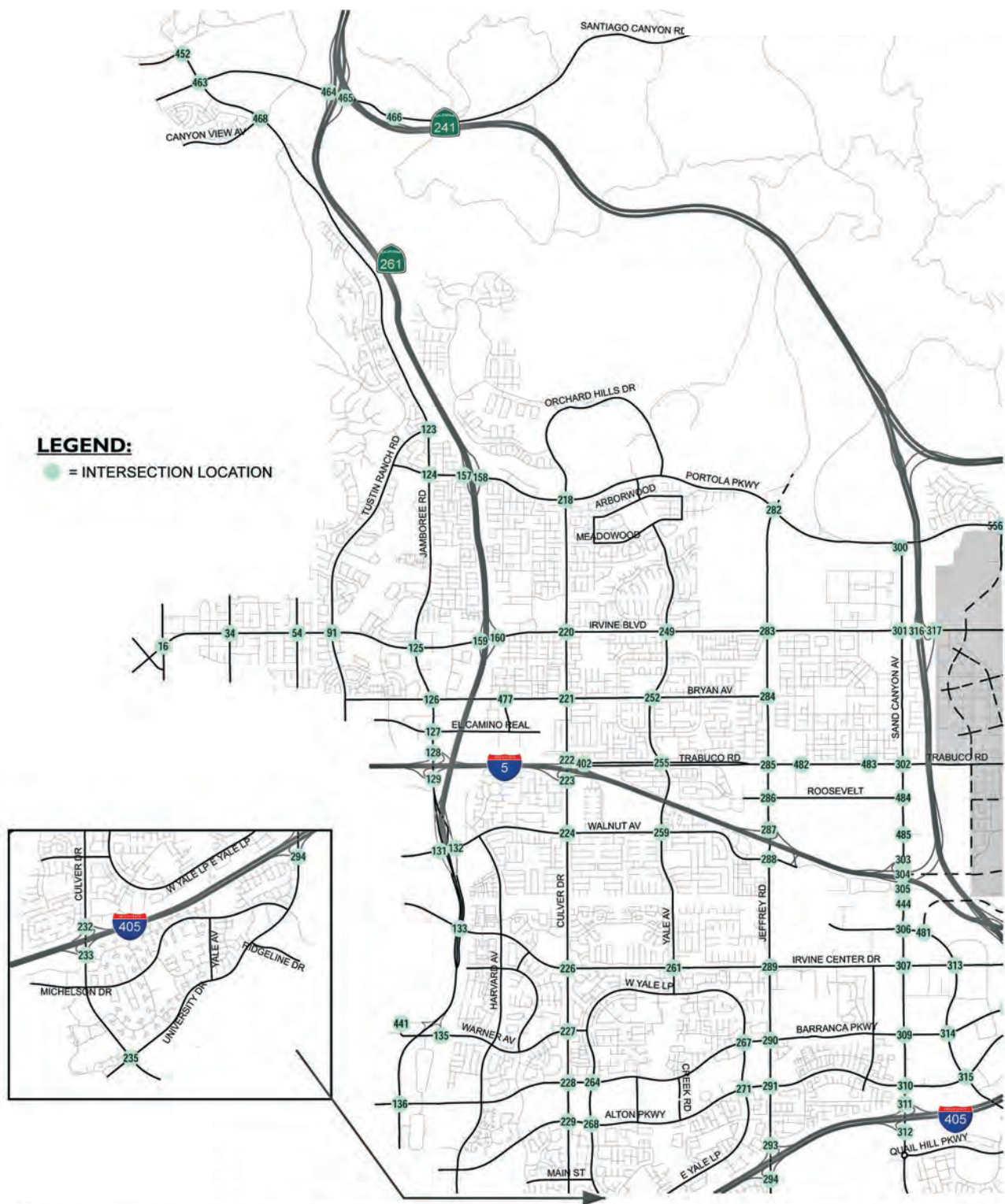
West Study Area



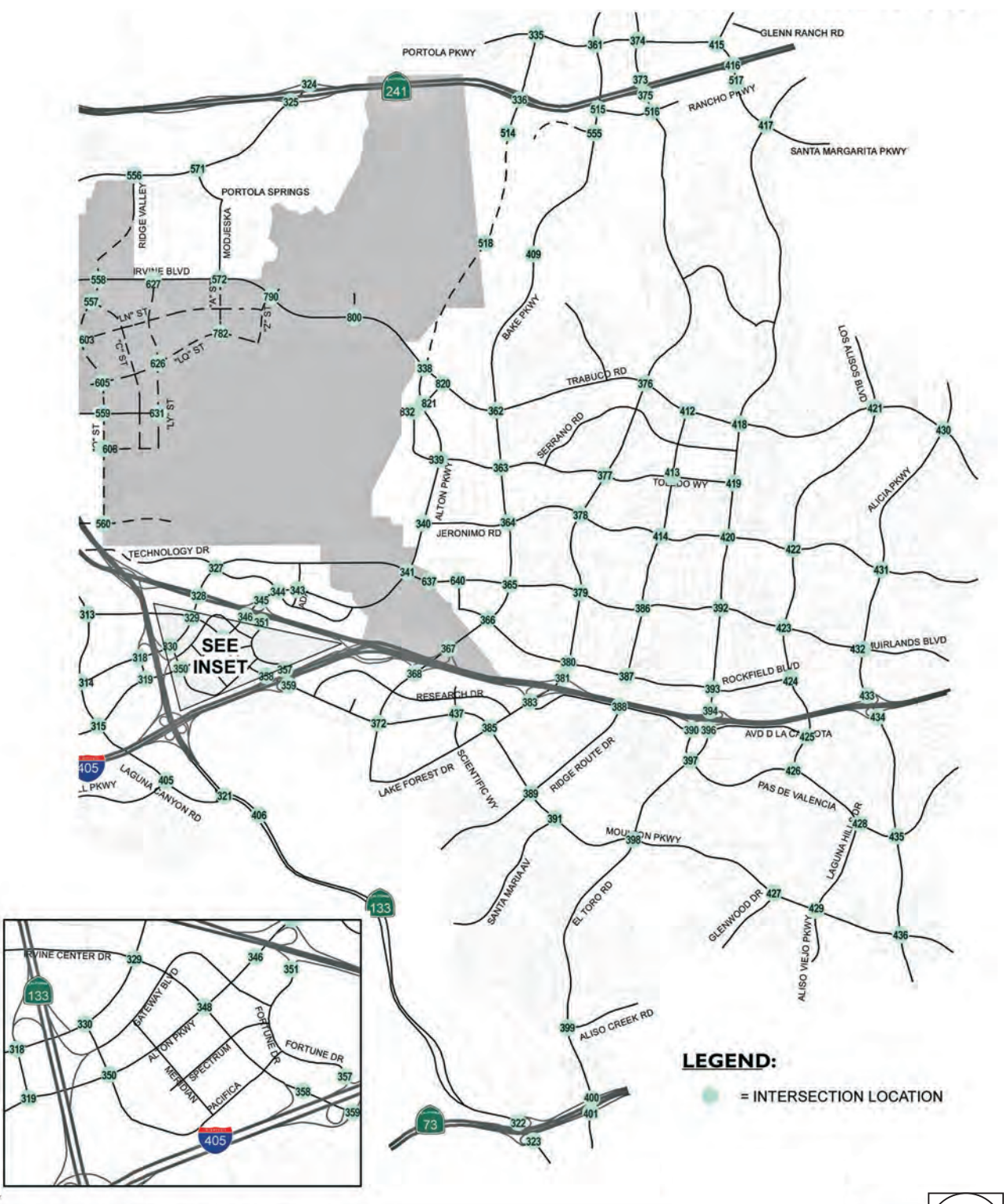
East Study Area



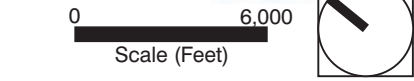
Year 2015 Intersection Location Map



West Study Area



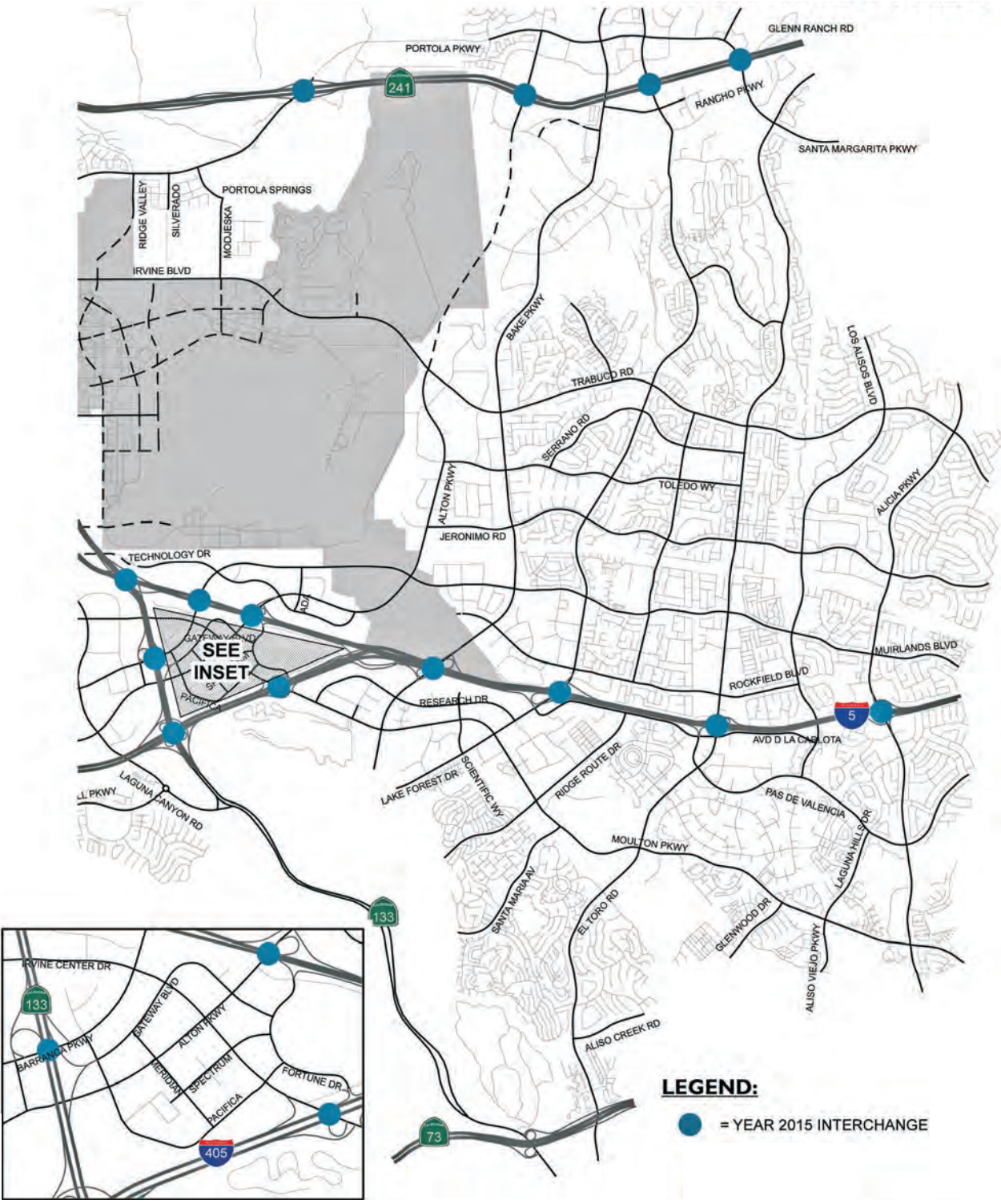
East Study Area



Year 2015 Freeway Interchange Locations



West Study Area



East Study Area

0 6,000
Scale (Feet)



Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Interim Year 2015 Circulation System and Average Daily Traffic Volumes, with 2012 Modified Project Option 2

The Year 2015 ADT volumes and the corresponding V/C ratios for the 2012 Modified Project Option 2 are illustrated in Figures 5.12-18, and Figures 5.12-19, respectively.

Based on the ADT and V/C performance criteria and impact thresholds, the following two (2) arterial roadway segments are potentially impacted by the 2012 Modified Project Option 2:

- Irvine Bl (west of A-02 St)
- Irvine Bl (east of A-02 St)

Consistent with the City's traffic study guidelines, these locations are further analyzed by examining peak hour levels of service. The resulting midblock peak hour V/C ratios for the arterial segments under Year 2015 conditions 2012 Modified Project Option 2 are summarized in Table 6-7 of the Traffic Study. As the summary table indicates, all arterial roadway segments are forecast to operate at acceptable levels of service during the peak hour, therefore none of the arterial segments exceed the adopted thresholds.

Interim Year 2015 Peak Hour Intersection Levels of Service, with 2012 Modified Project Option 2

For the 2012 Modified Project Option 2, Year 2015 AM and PM peak hour ICU results for the intersections illustrated in previous Figure 5.12-16 that are part of the study area are summarized in Table 6-8 in the Traffic Study. Actual turn volumes, lane geometrics and ICU calculation worksheets for the this scenario are included in Appendix 6.5 of the Traffic Study. Based on the peak hour intersection performance criteria and impact thresholds, none of the intersections are forecast to exceed adopted impact thresholds with 2012 Modified Project Option 2 based on Year 2015 conditions.

As previously stated, to address concerns expressed by Caltrans regarding the performance of ramp intersections in the immediate vicinity of the Proposed Project Site, the freeway ramp intersections at Sand Canyon Avenue/I-5 and SR-133/Irvine Boulevard interchanges have been analyzed using the HCM methodology in addition to the ICU methodology. The resulting Year 2015 Without Project and Year 2015 2012 Modified Project peak hour levels of service based on the HCM methodology are summarized in Table 6-9 of the Traffic Study (HCM intersection LOS calculation worksheets are included in Appendix 6.6 of the Traffic Study). As the summary table indicates, each of the ramp intersections are forecast to operate at an acceptable LOS (i.e., LOS D or better) under the Year 2015 for the 2012 Modified Project Option 2 conditions.

In addition to the peak hour HCM ramp analysis, a queuing analysis was carried out for the Sand Canyon Avenue/I-5 freeway ramps. For the off-ramps at the Sand Canyon/I-5 interchange, the potential for exiting traffic to back up onto the I-5 mainline was evaluated by performing a detailed queuing analysis. The HCM intersection LOS results presented earlier for the Sand Canyon Avenue/I-5 and SR-133/Irvine Boulevard ramp intersections based on the HCM methodology provide estimates of the vehicle queue lengths on the off-ramp approaches at each intersection (see Table 6-10 of the Traffic Study). Table 6-4 of the Traffic Study summarizes the longest 95th percentile queue length at each off-ramp under Year 2015 peak hour conditions for the 2012 Modified Project Option 2 (HCM queuing analysis calculation worksheets are included in Appendix 6.7 of the Traffic Study). As the summary table indicates, none of the vehicle queue lengths exceed the physical length of the off-ramps, and therefore traffic exiting at the

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

I-5 at Sand Canyon Avenue off-ramps is not expected to back up onto the I-5 mainline under this condition. The on-ramps at the Sand Canyon Avenue/I-5 interchanges are metered with queue detectors installed, and the timing of the ramp meters will continue to be coordinated by Caltrans and the City.

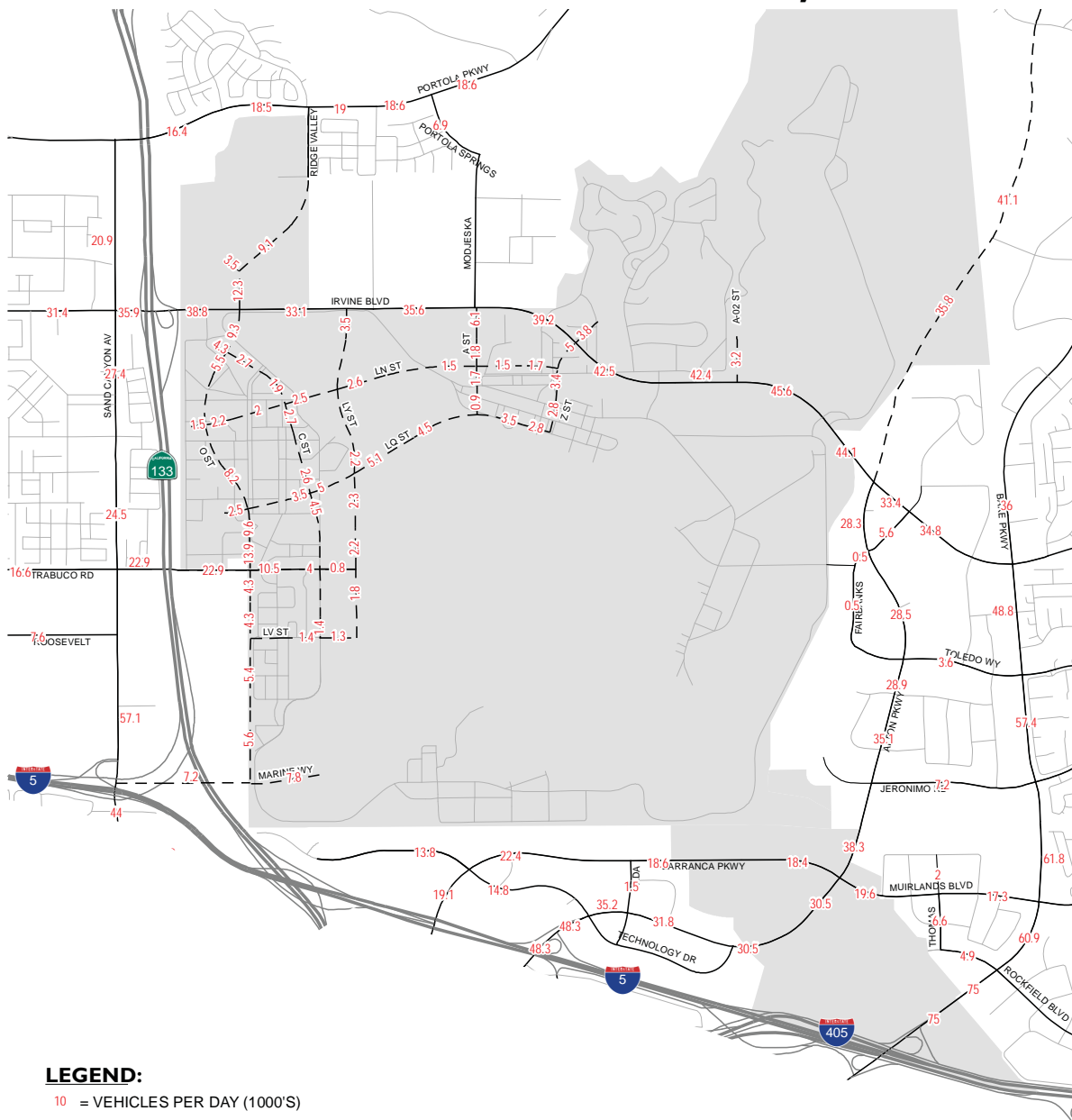
Interim Year 2015 Peak Hour Freeway/Tollway Ramp Levels of Service, with 2012 Modified Project Option 2

Figure 5.12-17 illustrates the interchange locations where freeway/tollway ramps were analyzed based on Year 2015 conditions. Year 2015 Without Project and Year 2015 with the 2012 Modified Project Option 2 AM and PM peak hour freeway/tollway ramp volumes and V/C ratios are summarized in Table 6-11 of the Traffic Study. Based on the peak hour freeway/tollway ramp performance criteria and impact thresholds presented earlier in this section, none of the freeway ramps are forecasted to exceed the adopted impact thresholds (e.g., greater than or equal to 0.02, except at CMP locations outside Irvine where it is greater than 0.03) under Year 2015 for the 2012 Modified Project Option 2 conditions.

Interim Year 2015 Peak Hour Freeway/Tollway Mainline Levels of Service, with 2012 Modified Project Option 2

Year 2015 Without Project and 2015 with the 2012 Modified Project Option 2 AM and PM freeway/tollway mainline peak hour volumes and V/C ratios are summarized in Table 6-12 of the Traffic Study. Based on the peak hour mainline performance criteria and impact thresholds, none of the freeway mainline segments are forecasted to exceed adopted impact thresholds (e.g., greater than 0.03) under Year 2015 for the 2012 Modified Project Option 2 conditions.

*Year 2015 ADT Volumes with 2012
Modified Project Option 2 (1 of 2)*



Project Area

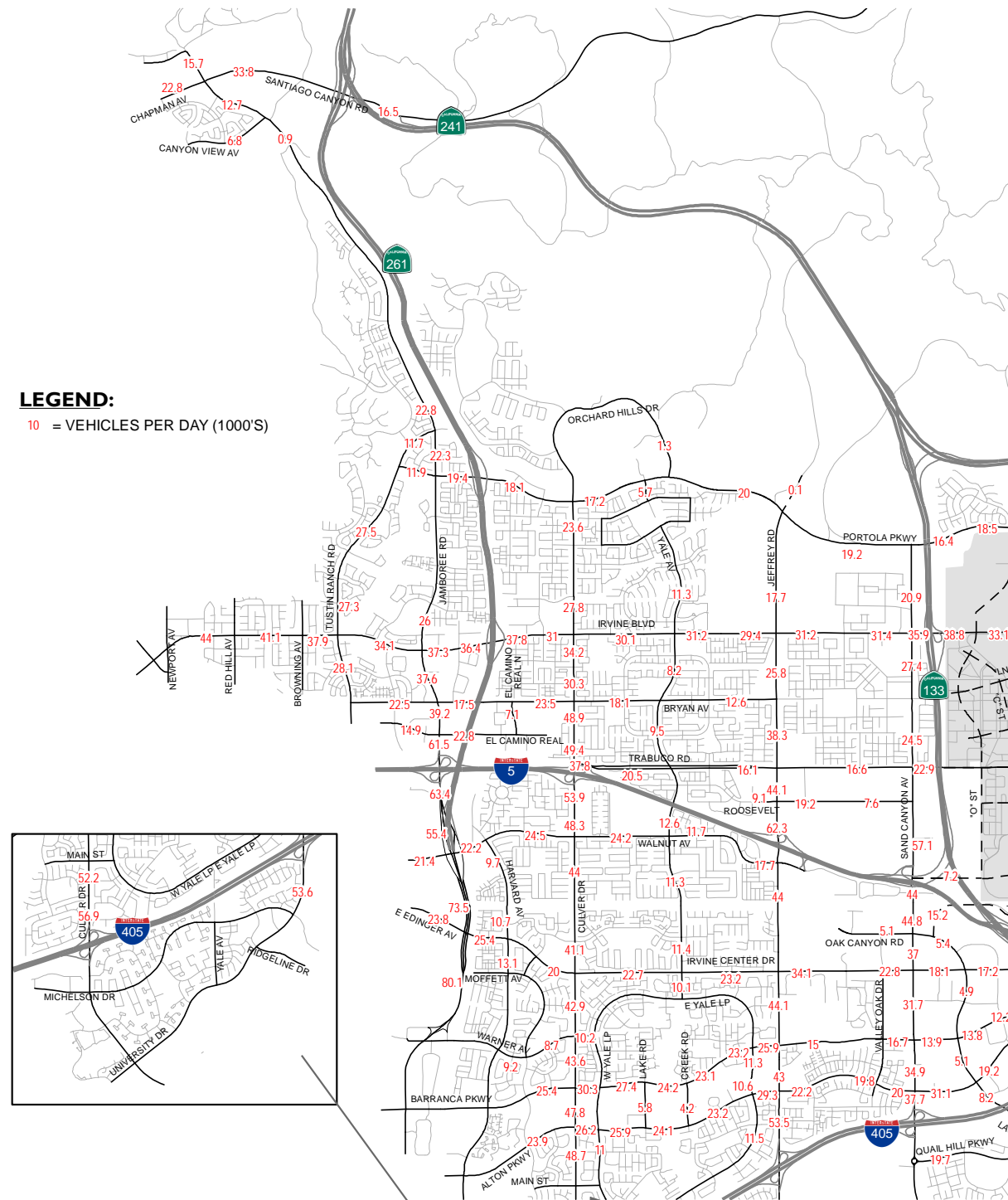


Source: Urban Crossroads 2012

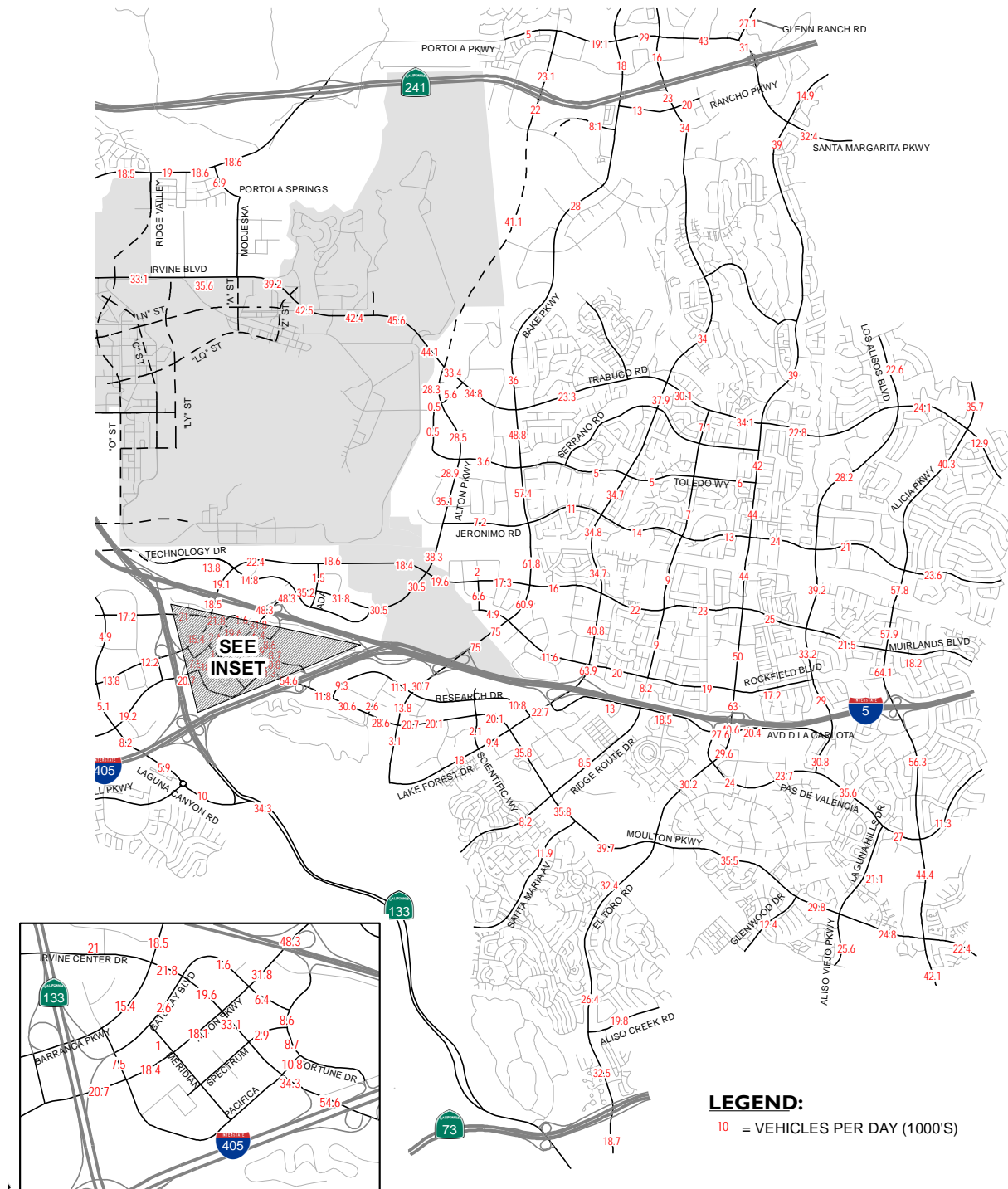
Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • Figure 5.12-18

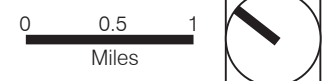
Year 2015 ADT Volumes with 2012 Modified Project Option 2 (2 of 2)



West Study Area

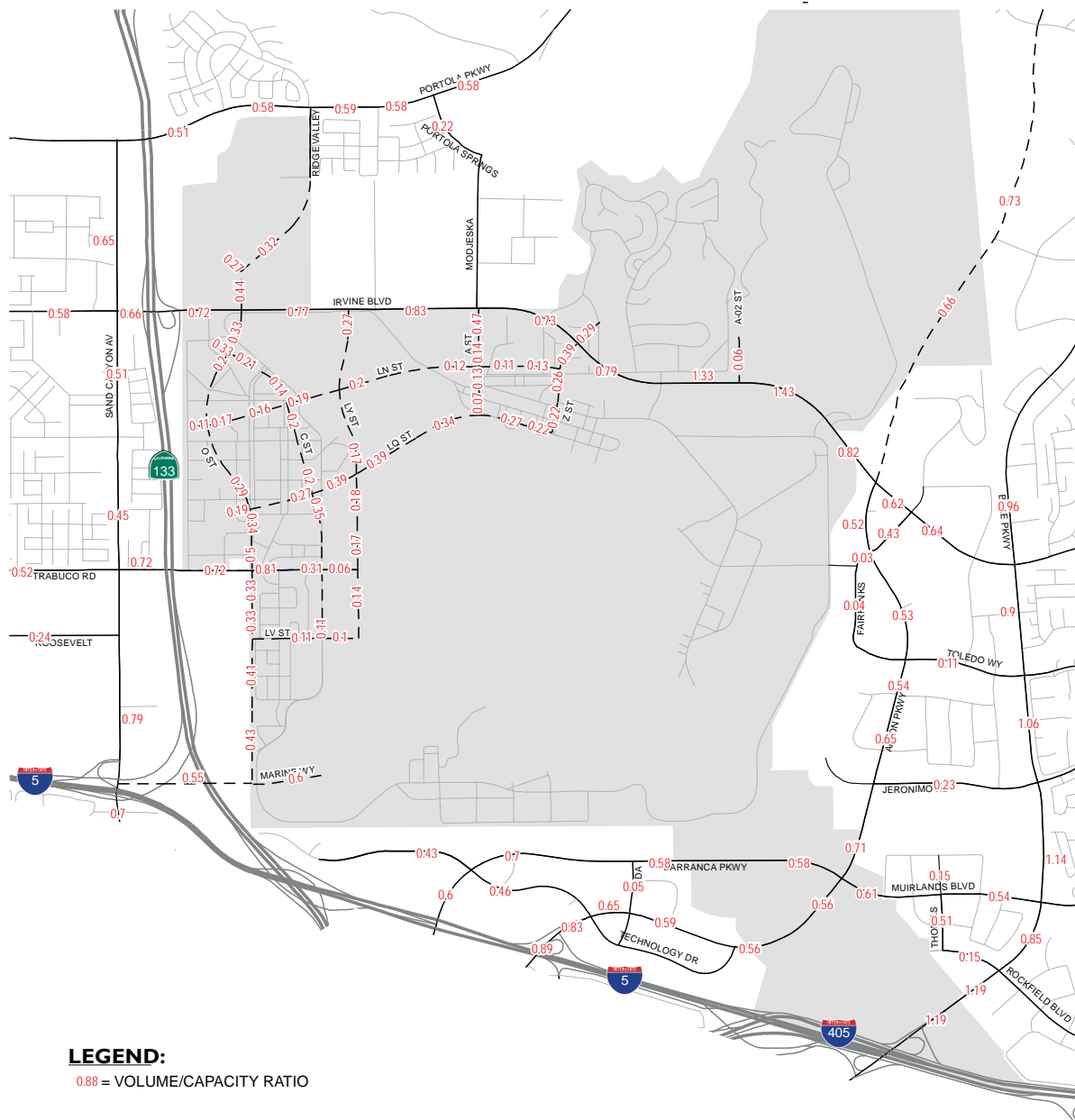


East Study Area



5. Environmental Analysis

Year 2015 ADT V/C Ratios with 2012 Modified Project Option 2 (1 of 2)



Project Area

0 1,500 3,000
Scale (Feet)

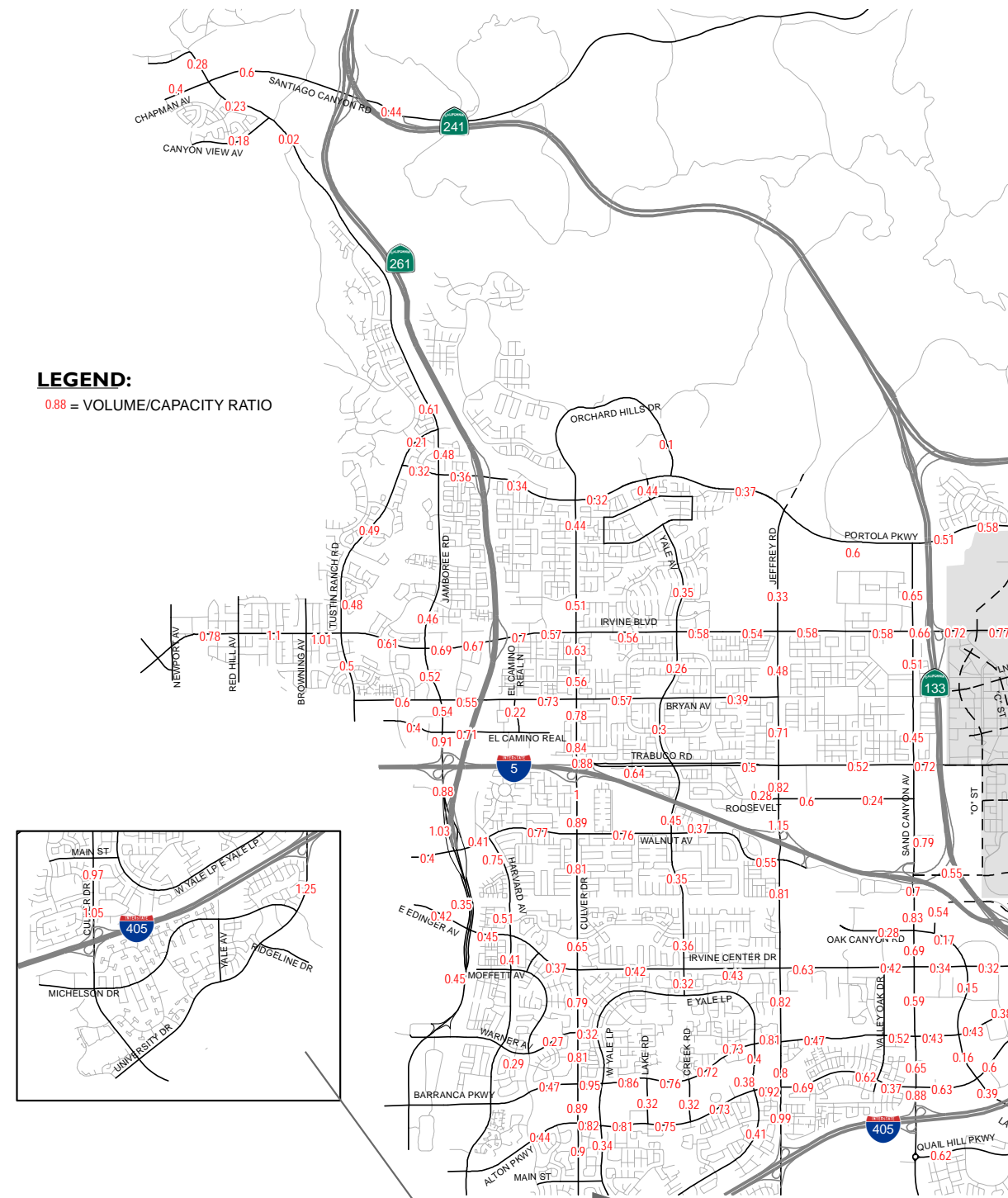


Source: Urban Crossroads 2012

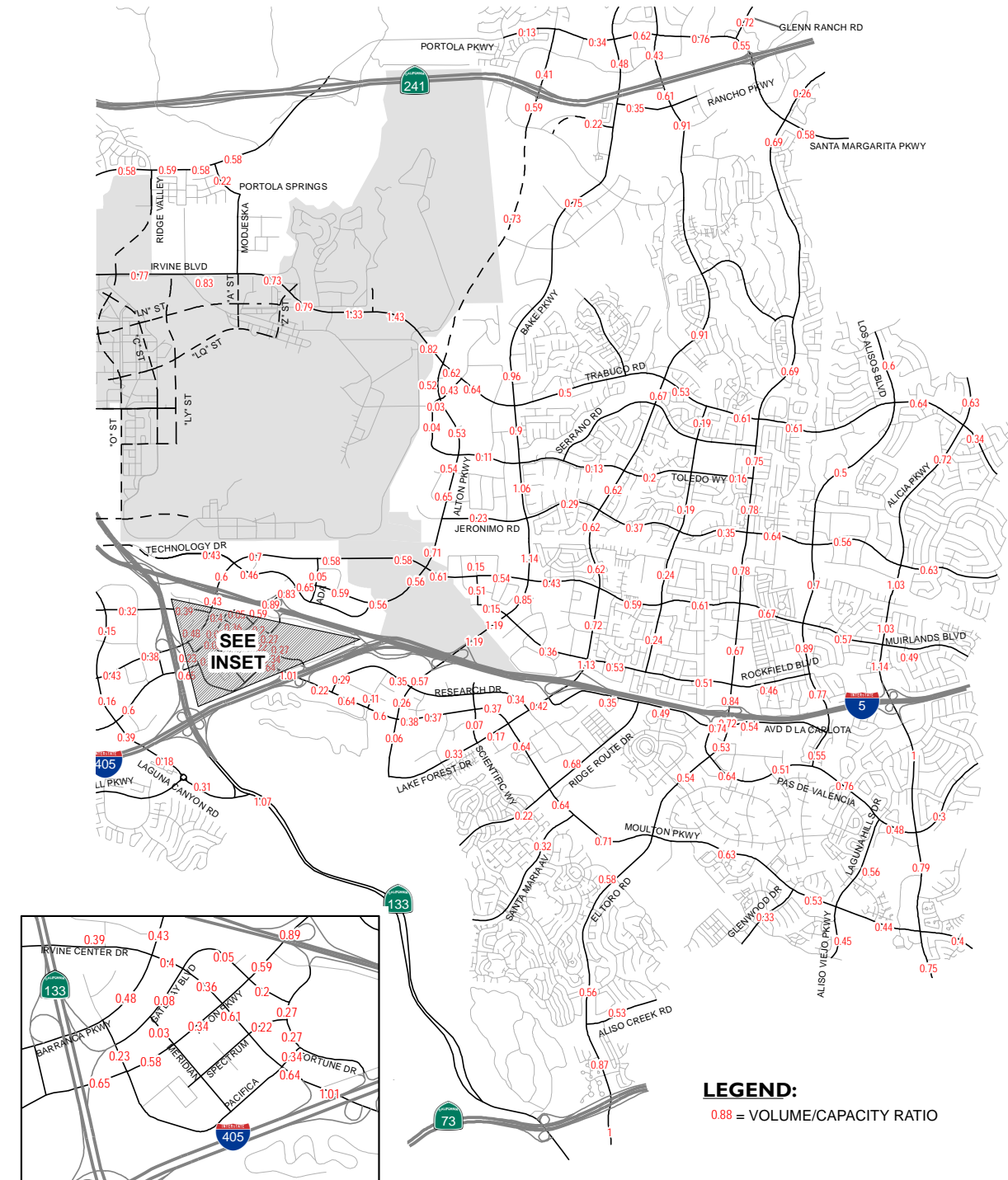
Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-19**

Year 2015 ADT V/C Ratios with 2012 Modified Project Option 2 (2 of 2)



West Study Area



East Study Area



5.12.4.4 Year 2030 Analysis with 2012 Modified Project

This section compares the 2030 Without Project to the 2012 Modified Project Option 1 and Option 2 in Year 2030. The baseline for this DSSEIR is the 2011 Approved Project. As discussed previously, ITAM Version 8.4-10 (ITAM 8.4-10) and the Lake Forest Traffic Analysis Model (LFTAM) were used to prepare the traffic forecasts that are applied in the analysis for 2030 conditions. The results of the Year 2030 traffic impact analysis are summarized below for 2012 Modified Project Option 1 and Option 2 scenarios.

Year 2030 Circulation System and Average Daily Traffic Volumes for 2012 Modified Project Option 1

The Year 2030 for 2012 Modified Project Option 1 ADT volumes and the corresponding V/C ratios are illustrated in Figure 5.12-20, and Figure 5.12-21, respectively.

Based on the ADT V/C performance criteria and impact thresholds discussed above, the following five (5) arterial roadway segments are potentially impacted by the 2012 Modified Project Option 1:

- Bake Pkwy (b/w Rockfield Bl and Marine Way)
- Irvine Bl (b/w A St and Z St)
- Irvine Bl (b/w Z St and B St)
- Jeffrey Rd (b/w Roosevelt and I-5 NB Ramps)
- Alton Pkwy (e/o Culver Dr)

Consistent with the City's traffic study guidelines, these locations have been further analyzed by examining peak hour levels of service. The resulting midblock peak hour V/C ratios for the arterial segments under Year 2030 for the 2012 Modified Project Option 1 scenario are summarized in Table 7-1 in the Traffic Study. As the summary table indicates, all arterial roadway segments are forecast to operate at acceptable levels of service during the peak hour, therefore none of the arterial segments exceed adopted thresholds.

Year 2030 Peak Hour Intersection Levels of Service, with 2012 Modified Project Option 1

The Year 2030 for the 2012 Modified Project Option 1 AM and PM peak hour ICU results for the intersections illustrated in Figure 5.12-22 that are in the study area are summarized in Table 7-2 in the Traffic Study. Actual turn volumes, lane geometrics and ICU calculation worksheets for the Year 2030 for the 2012 Modified Project Option 1 scenario are included in Appendix 7.2 to the Traffic Study. Based on the peak hour intersection performance criteria and impact thresholds, the following intersections shown in Table 5.12-7 exceed adopted impact thresholds under the Year 2030 for the 2012 Modified Project Option 1 conditions:

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TRANSPORTATION AND TRAFFIC

*Table 5.12-7
Year 2030 Intersection ICU LOS With 2012 Modified Project Option 1
Project Impact Locations*

<i>Intersection</i>	<i>Peak Hour</i>	<i>2030 Without 2012 Modified Project</i>		<i>2030 2012 Modified Project</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
Browning Ave. & Irvine Blvd.	AM	1.00	E	1.03	F
Culver Dr. & Barranca Pkwy.	AM	0.91	E	0.93	E
Jeffrey Rd. & Barranca Pkwy.	AM	0.90	D	0.92	E
Sand Canyon & I-5 NB Ramp/Marine	PM	0.83	D	0.94	E
Sand Canyon Ave. & Oak Canyon	PM	0.91	E	0.94	E
Bake Pkwy. & Rockfield Blvd.	PM	0.98	E	1.01	F
Los Alisos Blvd. & Rockfield Blvd.	AM	0.92	E	0.94	E

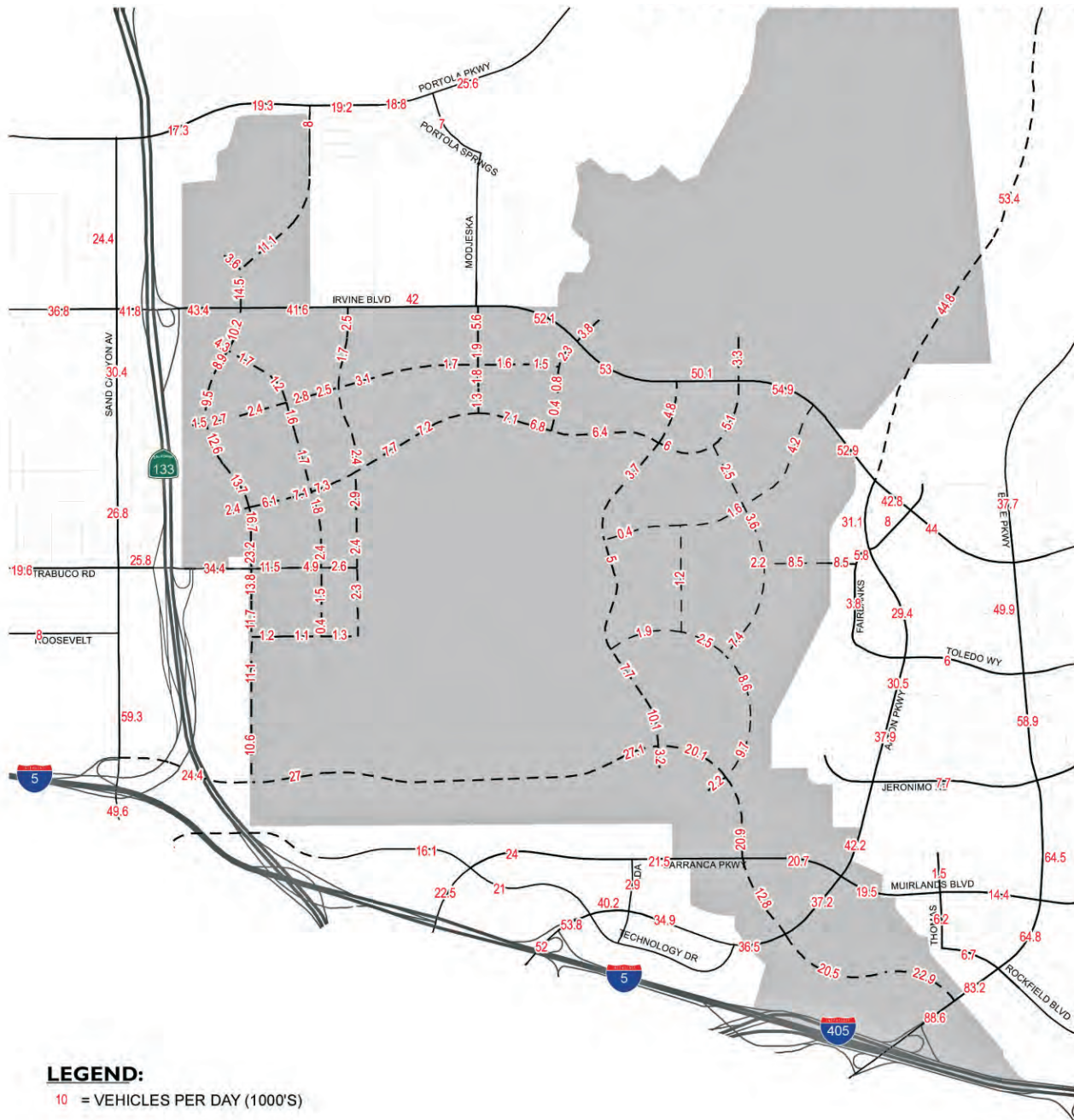
Source: Urban Crossroads, 2012.

To address concerns expressed by Caltrans regarding the performance of freeway/tollway ramp intersections in the immediate vicinity of the Proposed Project Site, the freeway ramp intersections at Sand Canyon Avenue/I-5, SR-133/Irvine Boulevard, and SR-133/Trabuco Road interchanges have been analyzed using both the HCM methodology and the ICU methodology. The resulting Year 2030 Without 2012 Modified Project and with 2012 Modified Project peak hour levels of service based on the HCM methodology are summarized in Table 7-4 in the Traffic Study (HCM intersection LOS calculation worksheets are included in Appendix 7.3 to the Traffic Study). As the summary table indicates, each of the ramp intersections is forecasted to operate at an acceptable LOS (i.e., LOS D or better), with the exception of the Sand Canyon/I-5 northbound ramps and the Sand Canyon/I-5 southbound ramps.

In addition to the peak hour HCM ramp analysis, a queuing analysis was carried out for the Sand Canyon Avenue/I-5 ramps. For the off-ramps at the Sand Canyon/I-5 interchange, the potential for exiting traffic to back up onto the I-5 mainline was evaluated by performing a detailed queuing analysis. The HCM intersection LOS results presented earlier for the Sand Canyon Avenue/I-5, SR-133/Irvine Boulevard, and SR-133/Trabuco Road ramp intersections based on the HCM methodology provide estimates of the vehicle queue lengths on the off-ramp approaches at each intersection. Table 7-5 in the Traffic Study summarizes the longest 95th percentile queue length at each off-ramp under Year 2030 with 2012 Modified Project Option 1 peak hour conditions (HCM queuing analysis calculation worksheets are included in Appendix 7.4 to the Traffic Study). As the summary table indicates, the results of the HCM analysis shows LOS “E” conditions with or without the 2012 Modified Project at the I-5 NB Ramp /Sand Canyon intersection. A modified lane configuration (restriping to accomplish dual left turn and dual right turn lanes) on the eastbound approach to the I-5 SB Ramp intersection would avoid vehicle queues backing onto the freeway mainline. The ultimate lane configuration would be subject to coordination and agreement between the City and Caltrans.

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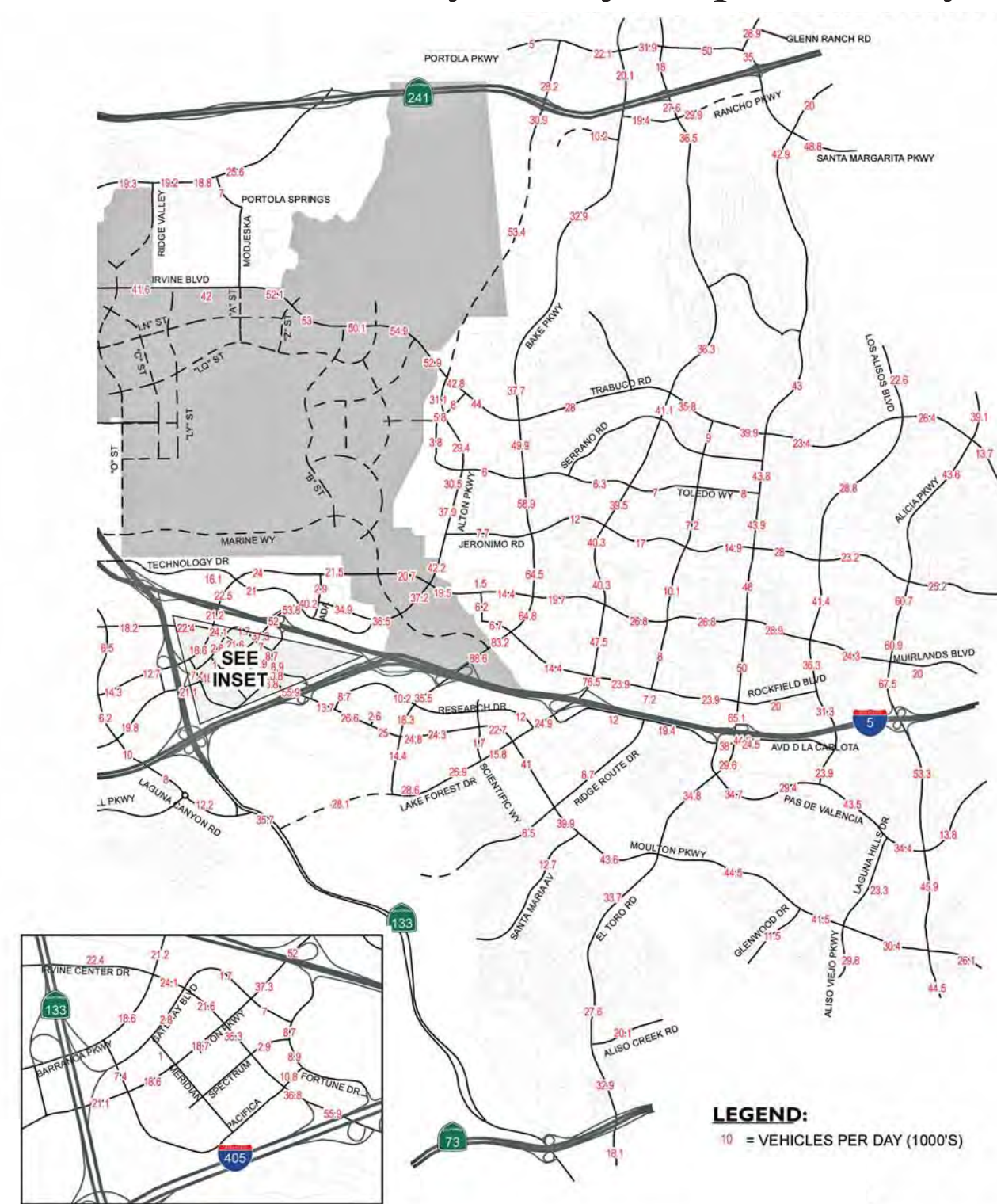
Year 2030 ADT Volumes with 2012 Modified Project Option 1 (1 of 2)



Year 2030 ADT Volumes with 2012 Modified Project Option 1 (2 of 2)



West Study Area



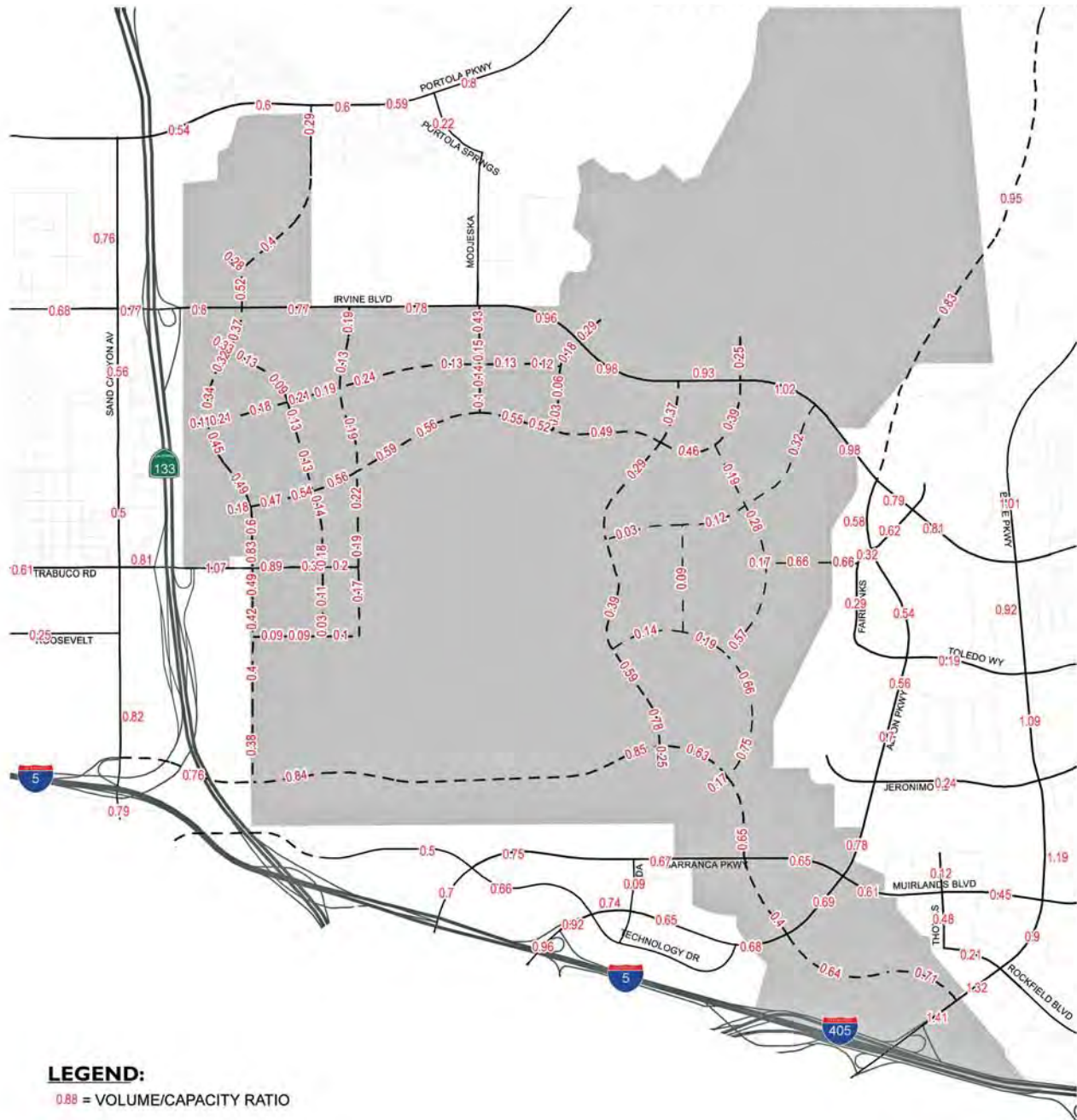
East Study Area

0 6,000
Scale (Feet)



5. Environmental Analysis

Year 2030 ADT V/C Ratios with 2012 Modified Project Option 1 (1 of 2)

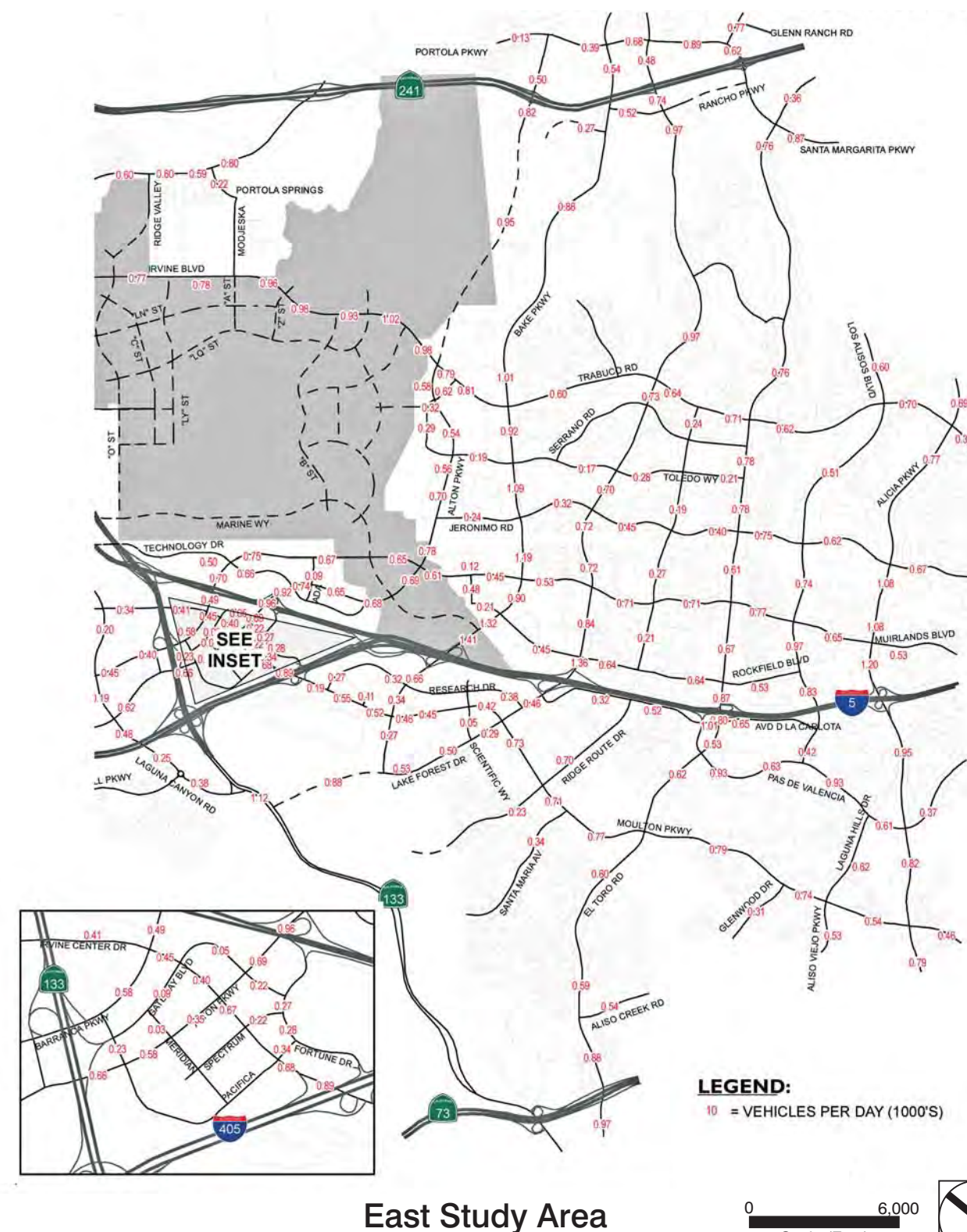


Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-21**

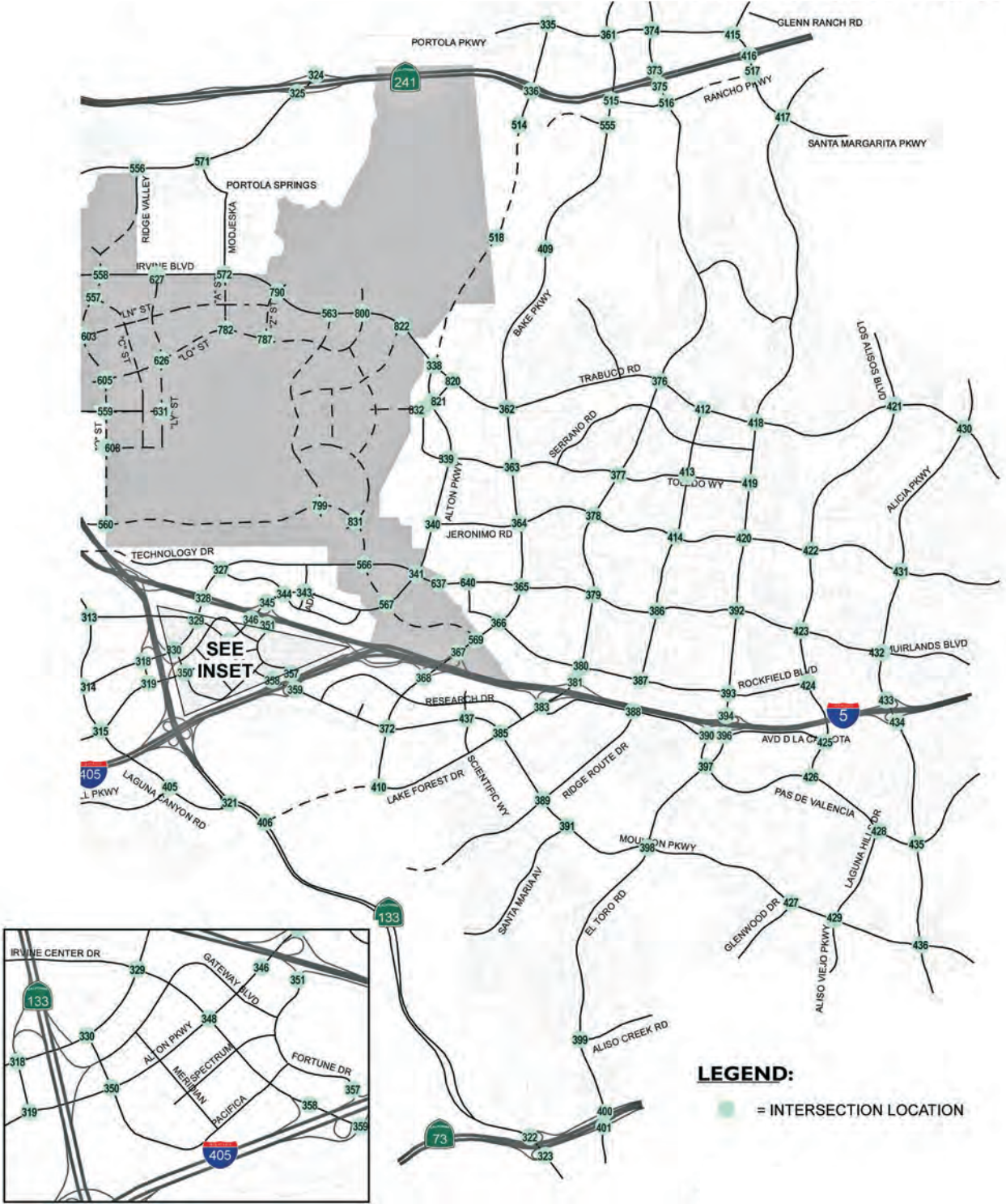
Year 2030 ADT V/C Ratios with 2012 Modified Project Option 1 (2 of 2)



0 6,000
Scale (Feet)



Year 2030 Intersection Location Map



0 6,000
Scale (Feet)



Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

Year 2030 Peak Hour Freeway/Tollway Ramp Levels of Service, with 2012 Modified Project Option 1

Figure 5.12-23 illustrates the interchange locations where freeway/tollway ramps were analyzed based on Year 2030 conditions. The Year 2030 Without Project and with the 2012 Modified Project Option 1 AM and PM peak hour ramp volumes and V/C ratios are summarized in Table 7-6 in the Traffic Study. Based on the peak hour ramp performance criteria and impact thresholds presented earlier, none of the freeway ramps are forecasted to exceed adopted impact thresholds (e.g., greater than or equal to 0.02, except at CMP locations outside Irvine where it is greater than 0.03) under Year 2030 with the 2012 Modified Project Option 1 conditions.

Year 2030 Peak Hour Freeway/Tollway Mainline Levels of Service, with 2012 Modified Project Option 1

The Year 2030 Without Project and 2012 Modified Project Option 1 AM and PM freeway/tollway mainline peak hour volumes and V/C ratios are summarized in Table 7-7 in the Traffic Study. Based on the peak hour mainline performance criteria and impact thresholds discussed above, the following three (3) freeway mainline segments are forecasted to exceed adopted impact thresholds (e.g., greater than 0.03):

- I-5 Northbound, n/o Culver
- I-5 Northbound, n/o Jeffrey
- I-405 Northbound, n/o Jeffrey

Year 2030 Circulation System and Average Daily Traffic Volumes for 2012 Modified Project Option 2

The Year 2030 for 2012 Modified Project Option 2 ADT volumes and the corresponding V/C ratios are illustrated in Figure 5.12-24, and Figure 5.12-25, respectively.

Based on the ADT V/C performance criteria and impact thresholds discussed above, the following four (4) arterial roadway segments are potentially impacted by the 2012 Modified Project Option 2:

- Bake Pkwy (b/w Rockfield Bl and Marine Way)
- Irvine Bl (b/w A St and Z St)
- Irvine Bl (b/w Z St and B St)
- Alton Pkwy (e/o Culver Dr)

Consistent with the City's traffic study guidelines, these locations have been further analyzed by examining peak hour levels of service. The resulting midblock peak hour V/C ratios for the arterial segments under Year 2030 for the 2012 Modified Project Option 2 condition are summarized in Table 7-8 in the Traffic Study. As the summary table indicates, all arterial roadway segments are forecast to operate at acceptable levels of service during the peak hour, therefore none of the arterial segments exceed adopted thresholds.

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TRANSPORTATION AND TRAFFIC

Year 2030 Peak Hour Intersection Levels of Service, with 2012 Modified Project Option 2

The Year 2030 for the 2012 Modified Project Option 2 AM and PM peak hour ICU results for the intersections illustrated in previous Figure 5.12-22 that are in the study area are summarized in Table 7-9 in the Traffic Study. Actual turn volumes, lane geometrics and ICU calculation worksheets for the Year 2030 for the 2012 Modified Project Option 2 scenario are included in Appendix 7.5 to the Traffic Study. Based on the peak hour intersection performance criteria and impact thresholds, the following intersections shown in Table 5.12-8 exceed adopted impact thresholds under the Year 2030 for the 2012 Modified Project Option 2 conditions:

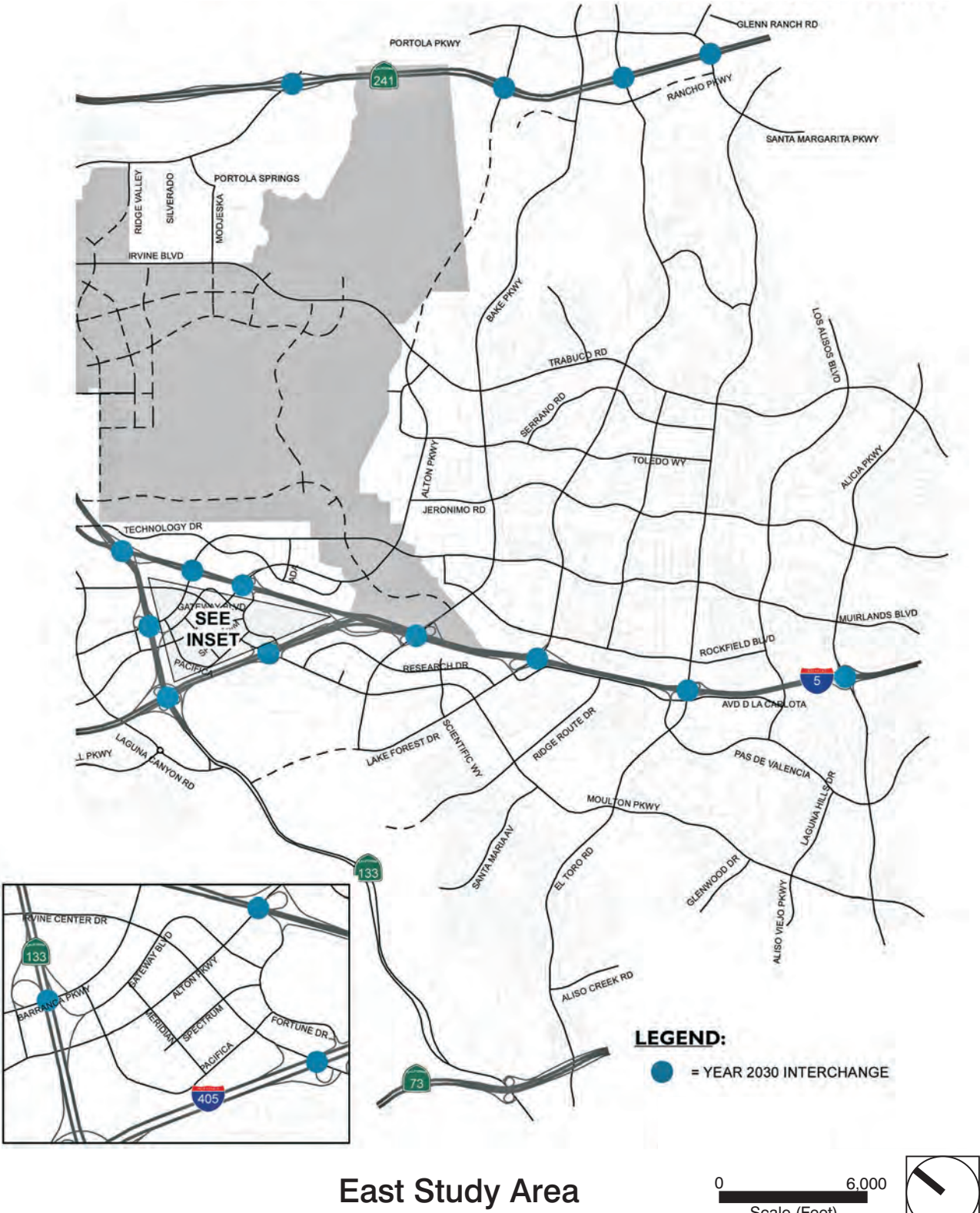
*Table 5.12-8
Year 2030 Intersection ICU LOS With 2012 Modified Project Option 2
Project Impact Locations*

<i>Intersection</i>	<i>Peak Hour</i>	<i>2030 Without 2012 Modified Project</i>		<i>2030 2012 Modified Project</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
Newport Ave. at Irvine Blvd.	PM	0.92	E	0.95	E
Browning Ave. at Irvine Blvd.	AM	1.00	E	1.02	F
Culver Dr. at Bryan Ave.	AM	0.89	D	0.91	E
Culver Dr. at Barranca Pkwy.	AM	0.91	E	0.93	E
Jeffrey Rd. at Barranca Pkwy.	AM	0.90	D	0.91	E
Sand Canyon at I-5 NB Ramp/Marine	PM	0.83	D	0.94	E
Sand Canyon Ave. at Oak Canyon	PM	0.91	E	0.93	E
Bake Pkwy. at Rockfield Blvd.	PM	0.98	E	1.01	F

Source: Urban Crossroads, 2012.

To address concerns expressed by Caltrans regarding the performance of freeway/tollway ramp intersections in the immediate vicinity of the Proposed Project Site, the freeway ramp intersections at Sand Canyon Avenue/I-5, SR-133/Irvine Boulevard, and SR-133/Trabuco Road interchanges have been analyzed using both the HCM methodology and the ICU methodology. The resulting Year 2030 Without 2012 Modified Project and with 2012 Modified Project peak hour levels of service based on the HCM methodology are summarized in Table 7-11 in the Traffic Study (HCM intersection LOS calculation worksheets are included in Appendix 7.6 to the Traffic Study). As the summary table indicates, each of the ramp intersections is forecasted to operate at an acceptable LOS (i.e., LOS D or better), with the exception of the Sand Canyon/I-5 northbound ramps and the Sand Canyon/I-5 southbound ramps.

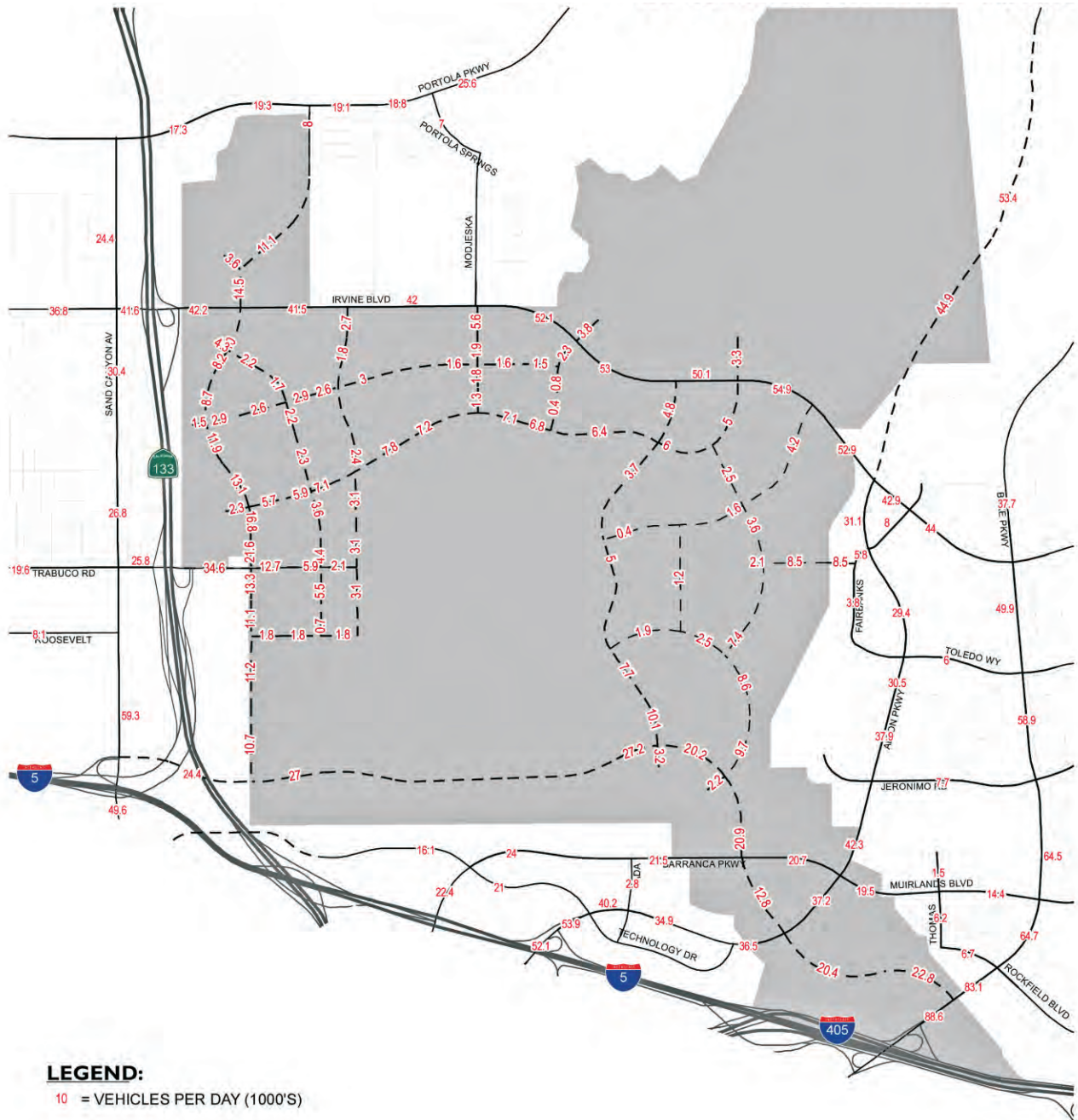
Year 2030 Freeway Interchange Locations



Source: Urban Crossroads 2012
Heritage Fields Project 2012 GPA/ZC SSEIR

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Year 2030 ADT Volumes with 2012 Modified Project Option 2 (1 of 2)

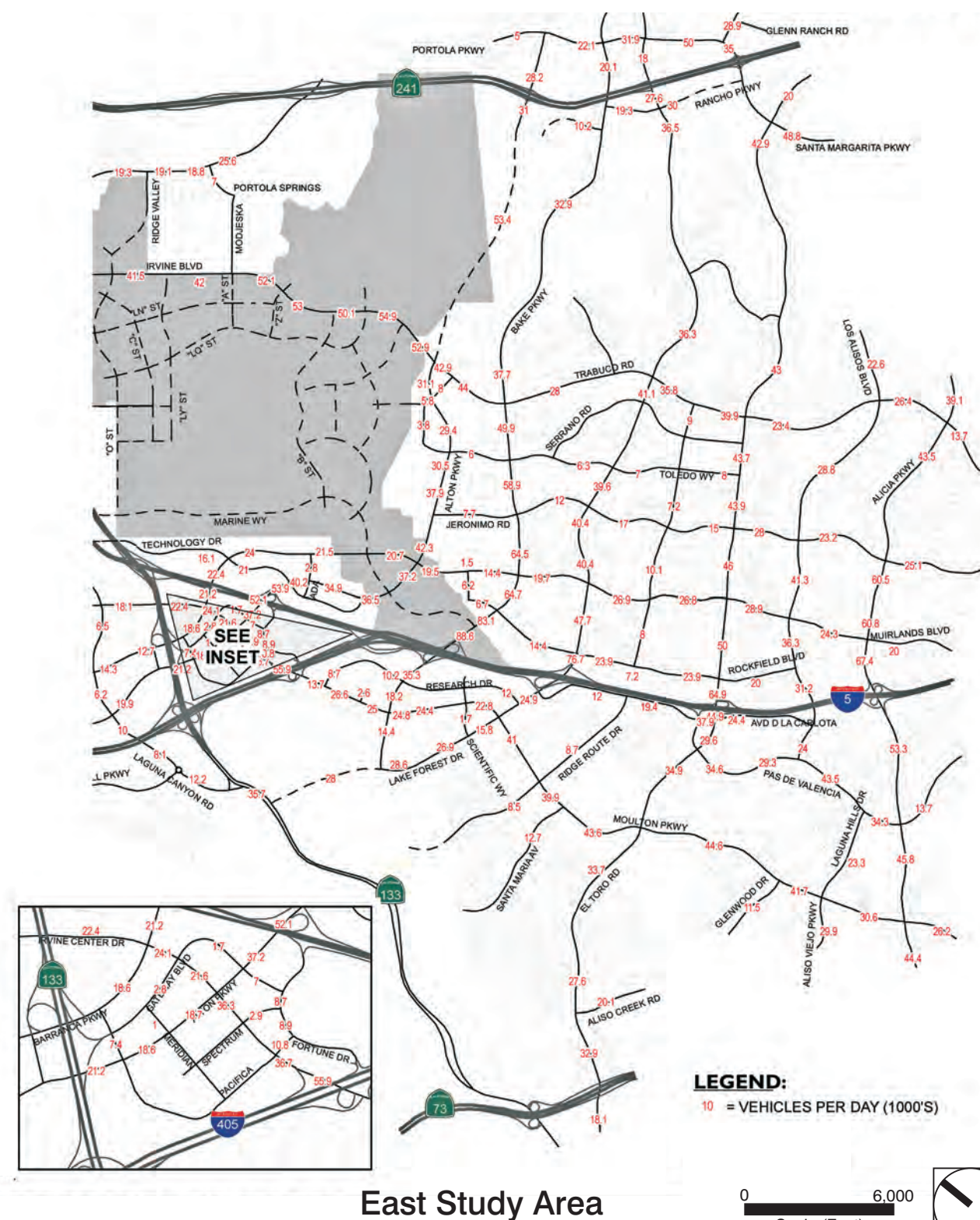


Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-24**

Year 2030 ADT Volumes with 2012 Modified Project Option 2 (2 of 2)



0 6,000
Scale (Feet)



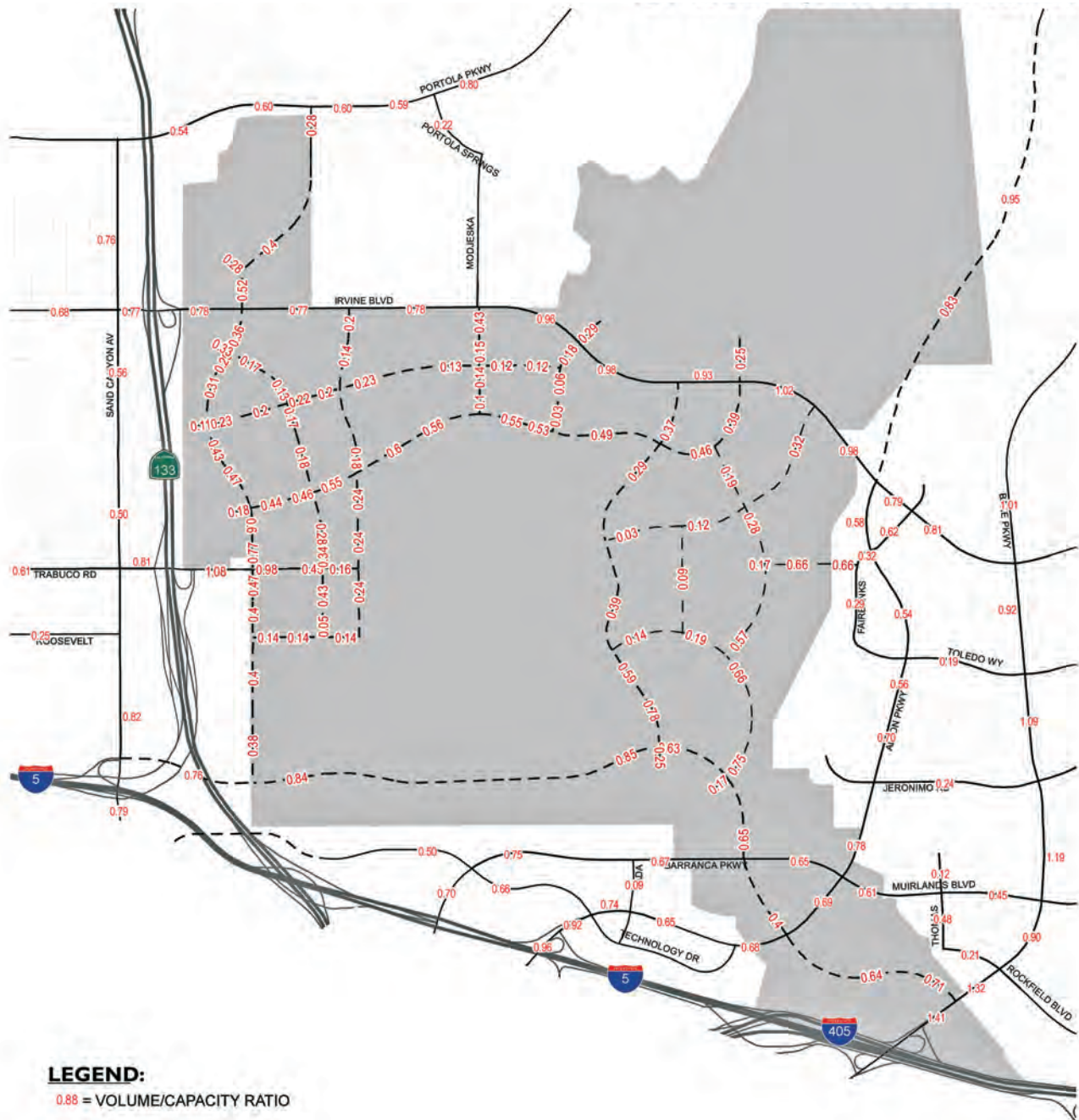
Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-24**

5. Environmental Analysis

Year 2030 ADT V/C Ratios with 2012 Modified Project Option 2 (1 of 2)



Project Area

0 3,000
Scale (Feet)

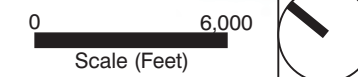
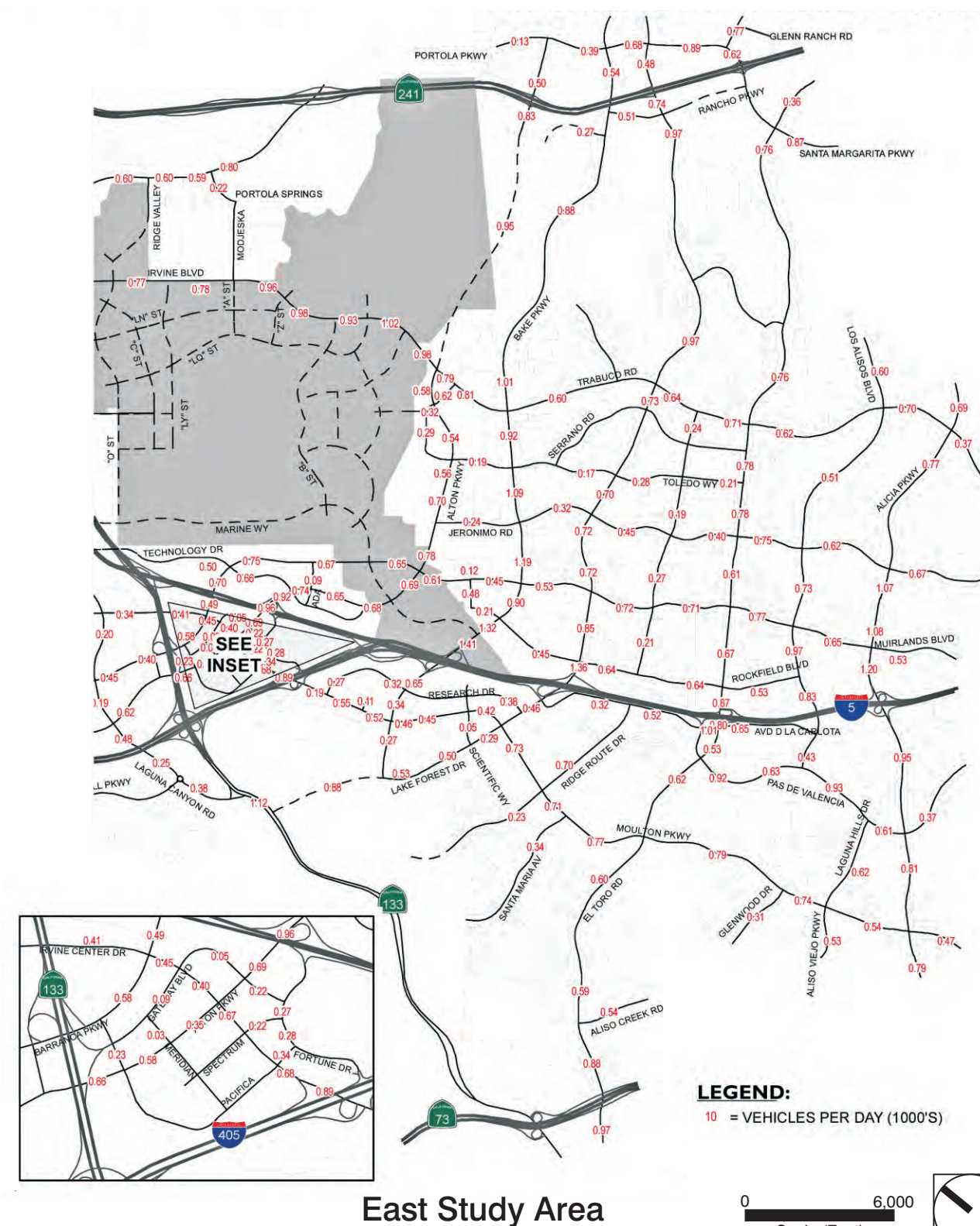


Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-25**

Year 2030 ADT V/C Ratios with 2012 Modified Project Option 2 (2 of 2)



Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-25**

5. Environmental Analysis

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In addition to the peak hour HCM ramp analysis, a queuing analysis was carried out for the Sand Canyon Avenue/I-5 ramps. For the off-ramps at the Sand Canyon/I-5 interchange, the potential for exiting traffic to back up onto the I-5 mainline was evaluated by performing a detailed queuing analysis. The HCM intersection LOS results presented earlier for the Sand Canyon Avenue/I-5, SR-133/Irvine Boulevard, and SR-133/Trabuco Road ramp intersections based on the HCM methodology provide estimates of the vehicle queue lengths on the off-ramp approaches at each intersection. Table 7-12 in the Traffic Study summarizes the longest 95th percentile queue length at each off-ramp under Year 2030 with 2012 Modified Project Option 2 peak hour conditions (HCM queuing analysis calculation worksheets are included in Appendix 7.7 to the Traffic Study). As the summary table indicates, the results of the HCM analysis shows LOS “E” conditions with or without the 2012 Modified Project at the I-5 NB Ramp /Sand Canyon intersection. A modified lane configuration (restriping to accomplish dual left turn and dual right turn lanes) on the eastbound approach to the I-5 SB Ramp intersection would avoid vehicle queues backing onto the freeway mainline. The ultimate lane configuration would be subject to coordination and agreement between the City and Caltrans.

Year 2030 Peak Hour Freeway/Tollway Ramp Levels of Service, with 2012 Modified Project Option 2

Previous Figure 5.12-23 illustrates the interchange locations where freeway/tollway ramps were analyzed based on Year 2030 conditions. The Year 2030 Without Project and with the 2012 Modified Project Option 2 AM and PM peak hour ramp volumes and V/C ratios are summarized in Table 7-13 in the Traffic Study. Based on the peak hour ramp performance criteria and impact thresholds presented earlier, none of the freeway ramps are forecasted to exceed adopted impact thresholds (e.g., greater than or equal to 0.02, except at CMP locations outside Irvine where it is greater than 0.03) under Year 2030 with the 2012 Modified Project Option 2 conditions.

Year 2030 Peak Hour Freeway/Tollway Mainline Levels of Service, with 2012 Modified Project Option 2

The Year 2030 Without Project and 2012 Modified Project Option 2 AM and PM freeway/tollway mainline peak hour volumes and V/C ratios are summarized in Table 7-14 in the Traffic Study. Based on the peak hour mainline performance criteria and impact thresholds discussed above, the following three (3) freeway mainline segments are forecasted to exceed adopted impact thresholds (e.g., greater than 0.03):

- I-5 Northbound, n/o Culver
- I-5 Northbound, n/o Jeffrey
- I-405 Northbound, n/o Jeffrey

Year 2030 Mitigation Summary

The following presents the impact locations under 2030 conditions for the 2012 Modified Project Alternatives for Options 1 and 2. For additional alternatives for shared lane deployment, see Section 7-3 of the Traffic Study (Appendix I).

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TRANSPORTATION AND TRAFFIC

Option 1 Impact Locations

The following seven (7) intersections exceed adopted impact thresholds with the 2012 Modified Project with Option 1:

- Browning Ave. & Irvine Blvd.
- Culver Dr. & Barranca Pkwy.
- Jeffrey Rd. & Barranca Pkwy.
- Sand Canyon Ave. & I-5 NB Ramp/Marine Way
- Sand Canyon Ave. & Oak Canyon
- Bake Pkwy. & Rockfield Blvd.
- Los Alisos Blvd. & Rockfield Blvd.

Because existing occupied land uses along Irvine Boulevard at the Browning Avenue intersection constrain the construction of additional east-west through travel lanes which are consistent with the City of Tustin General Plan and County MPAH, the 2012 Modified Project Option 1 mitigation identifies ATMS at this location to optimize signal performance to mitigate impacts at this intersection, at the discretion of the City of Tustin.

At the intersection of Culver Drive / Barranca Parkway, the Project is responsible for NITM fair share participation towards the improvement (conversion of the westbound defacto right-turn lane to through lane) as mitigation for the Project impact. Planning Area 1/9 GPA/ZC has previously been identified as funding the balance of the fair share NITM Program improvement at this intersection.

At the intersection of Jeffrey Road / Barranca Parkway, the impact would be mitigated by advancing to 2030 the previously identified and funded ATMS mitigation scheduled for Post-2030.

The project mitigation at Sand Canyon Avenue / I-5 NB ramps/Marine Way is the conversion of the northbound defacto right turn lane to a standard right turn lane with right turn overlap signal operation. An alternative is to designate LOS "E" acceptance at this location and satisfy the requirements through TMSOS/ATMS participation. The level of TMSOS/ATMS participation shall be consistent with the methodology applied in the NITM Program.

The project mitigation at Sand Canyon Avenue / Oak Canyon is fair share responsibility for a previously identified PA40/12 mitigation improvement that would convert the westbound shared through/right lane to a single through lane and convert the westbound right-turn lane into a free-right turn lane. If pending projects are approved, this mitigation improvement will no longer be needed.

The Bake Parkway / Rockfield Boulevard intersection impact is mitigated by a fully funded modified LFTM Program improvement which involves the conversion of a westbound through lane to a 3rd left turn lane.

At the Los Alisos Boulevard/Rockfield Boulevard intersection, Project participation in the NITM improvement (addition of a southbound right turn lane) mitigates the impact.

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The 2012 Modified Project Option 1 exceeds the adopted impact threshold for 2030 conditions at the I-5 Northbound off-ramp to Jamboree Road. The proposed mitigation at this location is participation in the fair share funded NITM improvements to add a second drop lane from the I-5 to the Jamboree Road off-ramp.

Table 5.12-9 contains the analysis of these seven intersections and one freeway ramp with the proposed mitigation:

*Table 5.12-9
Year 2030 LOS With 2012 Modified Project Option 1
Project Impact Locations With Mitigation*

<i>Intersection</i>	<i>Peak Hour</i>	<i>2030 Without Project</i>		<i>2030 With Project</i>		<i>With Improvement</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
Browning Ave. & Irvine Blvd.	AM	1.00	E	1.03	F	0.98 ²	E
Culver Dr. & Barranca Pkwy.	AM	0.91	E	0.93	E	0.90	D
Jeffrey Rd. & Barranca Pkwy.	AM	0.90	D	0.92	E	0.87 ²	D
Sand Canyon & I-5 NB Ramp/Marine Way ¹	PM	0.83	D	0.94	E	0.89	D
Sand Canyon Ave. & Oak Canyon	PM	0.91	E	0.94	E	0.74	C
Bake Pkwy. & Rockfield Blvd.	PM	0.98	E	1.01	F	0.90	D
Los Alisos Blvd. & Rockfield Blvd.	AM	0.92	E	0.94	E	0.75	C
<i>Ramp Location:</i>							
I-5 NB Off-Ramp to Jamboree ³	AM	1.05	F	1.07	F	0.71	C

Source: Urban Crossroads, 2012.

¹ Assuming LOS "E" not acceptable

² ATMS credit (0.05) has been applied.

³ Improvement Capacity = 2,250, PM peak hour V/C = 0.57 (LOS A)

Project fair share participation in a directional capacity enhancement equivalent to a single general purpose lane at the following three freeway mainline segments mitigates the 2012 Modified Project Option 1 contribution to impacts at these locations:

- I-5 Northbound, n/o Culver
- I-5 Northbound, n/o Jeffrey
- I-405 Northbound, n/o Jeffrey

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Option 2 Impact Locations

Six of the seven intersections impacted by the 2012 Modified Project Option 1 are also impacted with Option 2. At these six locations, the Option 1 mitigation measures (described above) also mitigate Option 2 impacts:

- Browning Ave. & Irvine Blvd.
- Culver Dr. & Barranca Pkwy.
- Jeffrey Rd. & Barranca Pkwy.
- Sand Canyon Ave. & I-5 NB Ramp/Marine Way
- Sand Canyon Ave. & Oak Canyon
- Bake Pkwy. & Rockfield Blvd.

For 2030 conditions with the 2012 Modified Project Option 2, the following two additional intersections are also impacted:

- Newport Ave. & Irvine Blvd.
- Culver Dr. & Bryan Ave

The mitigation for the 2012 Modified Project Option 2 impact at Newport Drive/Irvine Boulevard intersection is a signal modification – northbound right turn overlap phase. If pending projects are approved, this mitigation improvement will no longer be needed.

The mitigation for the 2012 Modified Project Option 2 impact at Culver Drive/Bryan Avenue intersection is the addition of a westbound defacto right-turn lane. If pending projects are approved, this mitigation improvement will no longer be needed.

Table 5.12-10 contains the analysis of the 2012 Modified Project Option 2 impacted locations with the proposed mitigation:

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*Table 5.12-10
Year 2030 LOS With 2012 Modified Project Option 2
Project Impact Locations With Mitigation*

<i>Intersection</i>	<i>Peak Hour</i>	<i>2030 Without Project</i>		<i>2030 With Project</i>		<i>With Improvement</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
Newport Ave. at Irvine Blvd.	PM	0.92	E	0.95	E	0.91	E
Browning Ave. at Irvine Blvd.	AM	1.00	E	1.02	F	0.97 ²	E
Culver Dr. at Bryan Ave.	AM	0.89	D	0.91	E	0.88	D
Culver Dr. at Barranca Pkwy.	AM	0.91	E	0.93	E	0.90	D
Jeffrey Rd. at Barranca Pkwy.	AM	0.90	D	0.91	E	0.86 ²	D
Sand Canyon at I-5 NB Ramp/Marine Wy. ¹	PM	0.83	D	0.94	E	0.89	D
Sand Canyon Ave. at Oak Canyon	PM	0.91	E	0.93	E	0.74	C
Bake Pkwy. at Rockfield Blvd.	PM	0.98	E	1.01	F	0.91	E

Source: Urban Crossroads, 2012.

¹ Assuming LOS "E" not acceptable.

² ATMS credit (0.05) has been applied.

Project fair share participation in a directional capacity enhancement equivalent to a single general purpose lane at the following three freeway mainline segments mitigates the 2012 Modified Project Option 2 contribution to impacts at these locations:

- I-5 Northbound, n/o Culver
- I-5 Northbound, n/o Jeffrey
- I-405 Northbound, n/o Jeffrey

5.12.4.5 General Plan Buildout (Post-2030) Analysis

This section compares the Post-2030 Without Project Scenario to the 2012 Modified Project Option 1 and Option 2. The baseline for this DSSEIR is the 2011 Approved Project. As discussed previously, ITAM 8.4-10 and the LFTAM were used to prepare the Post-2030 Without Project and 2012 Modified Project traffic forecasts. The results of the Post-2030 traffic impact analysis for Options 1 and 2 are summarized below.

Post-2030 Traffic Impacts with 2012 Modified Project Option 1

The following sub-sections summarize the resulting Post-2030 Without Project and with the 2012 Modified Project Option 1 traffic conditions for the various components of the study area circulation system including arterial roads and intersections, freeway/tollway mainline segments and freeway/tollway ramps.

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Post-2030 Circulation System and Average Daily Traffic Volumes, Option 1

The Post-2030 2012 Modified Project Option 1 ADT volumes and corresponding V/C ratios are illustrated in Figures 5.12-26 and 5.12-27, respectively.

Based on the ADT V/C performance criteria and impact thresholds discussed above, the following three (3) arterial roadway segments are potentially impacted by the 2012 Modified Project Option 1:

- Alton Pkwy (b/w Culver Dr and W. Yale Loop)
- Bake Pkwy (b/w Rockfield Bl and Marine Way)
- Jeffrey Rd (b/w Roosevelt and I-5 NB Ramps)

Consistent with the City's traffic study guidelines, these locations are further analyzed by examining peak hour levels of service. The resulting midblock peak hour V/C ratios for the arterial segments under Post-2030 with the 2012 Modified Project conditions are summarized in Table 8-1 in the Traffic Study. As the summary table indicates, all arterial roadway segments are forecasted to operate at acceptable levels of service during the peak hour, therefore none of the arterial segments exceed adopted thresholds.

Post-2030 Peak Hour Intersection Levels of Service, Option 1

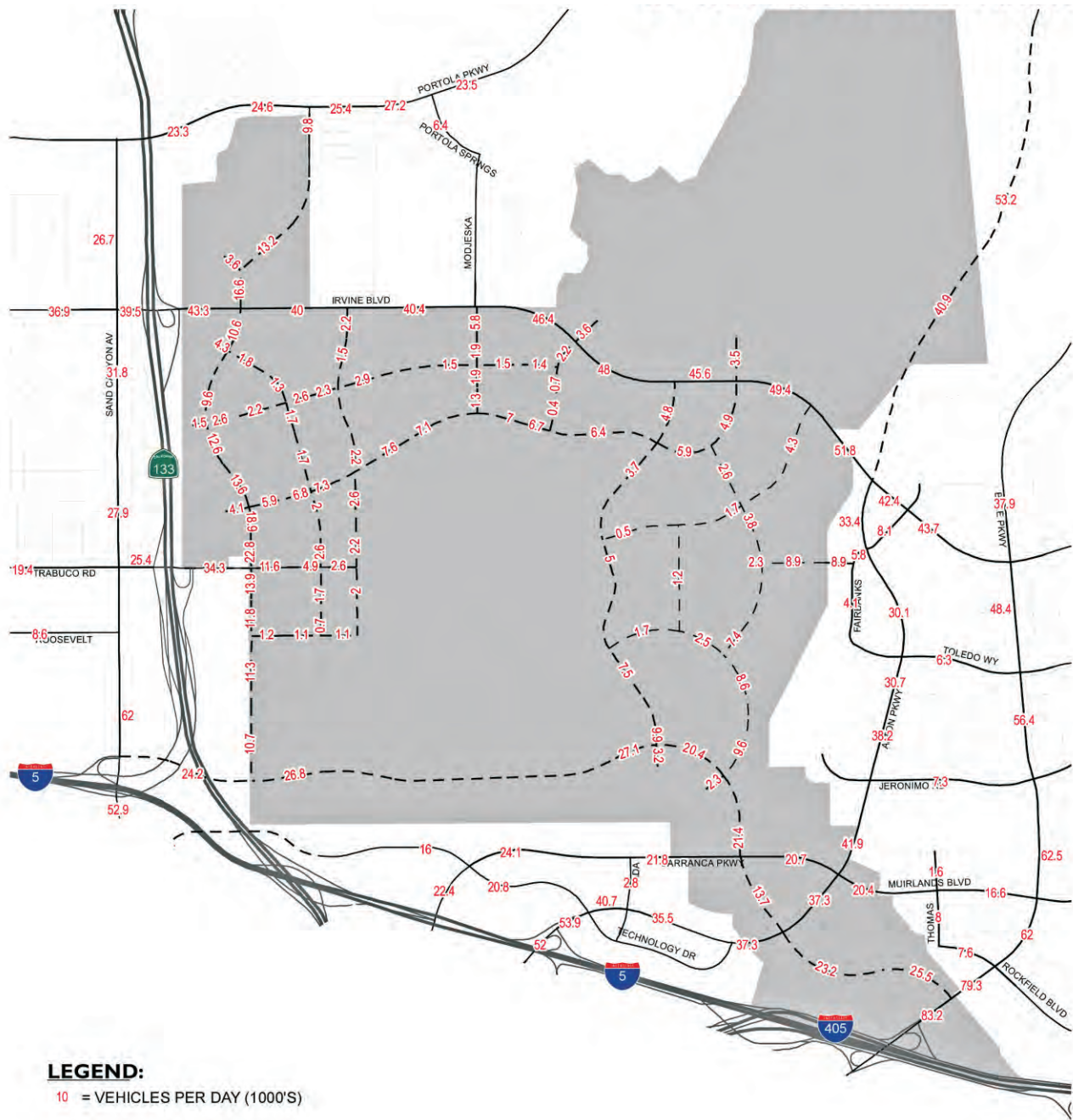
The Post-2030 with the 2012 Modified Project Option 1 AM and PM peak hour ICU results for the intersections illustrated in Figure 5.12-28 that are part of the study area are summarized in Table 8-2 in the Traffic Study. Actual turning volumes, lane geometrics and ICU calculation worksheets for the Post-2030 2012 Modified Project Option 1 scenario are included in Appendix 8.2 to the Traffic Study. Based on the peak hour intersection performance criteria and impact thresholds, the intersections of Jeffrey Road & Roosevelt, Jeffrey Road & Alton Parkway, and Laguna Canyon Road & Old Laguna Canyon exceed adopted impact thresholds under the 2012 Modified Project Option 1 scenario based on Post-2030 conditions, as shown on Table 5.12-11.

*Table 5.12-11
Post-2030 Intersection ICU LOS With 2012 Modified Project Option 1
Project Impact Locations*

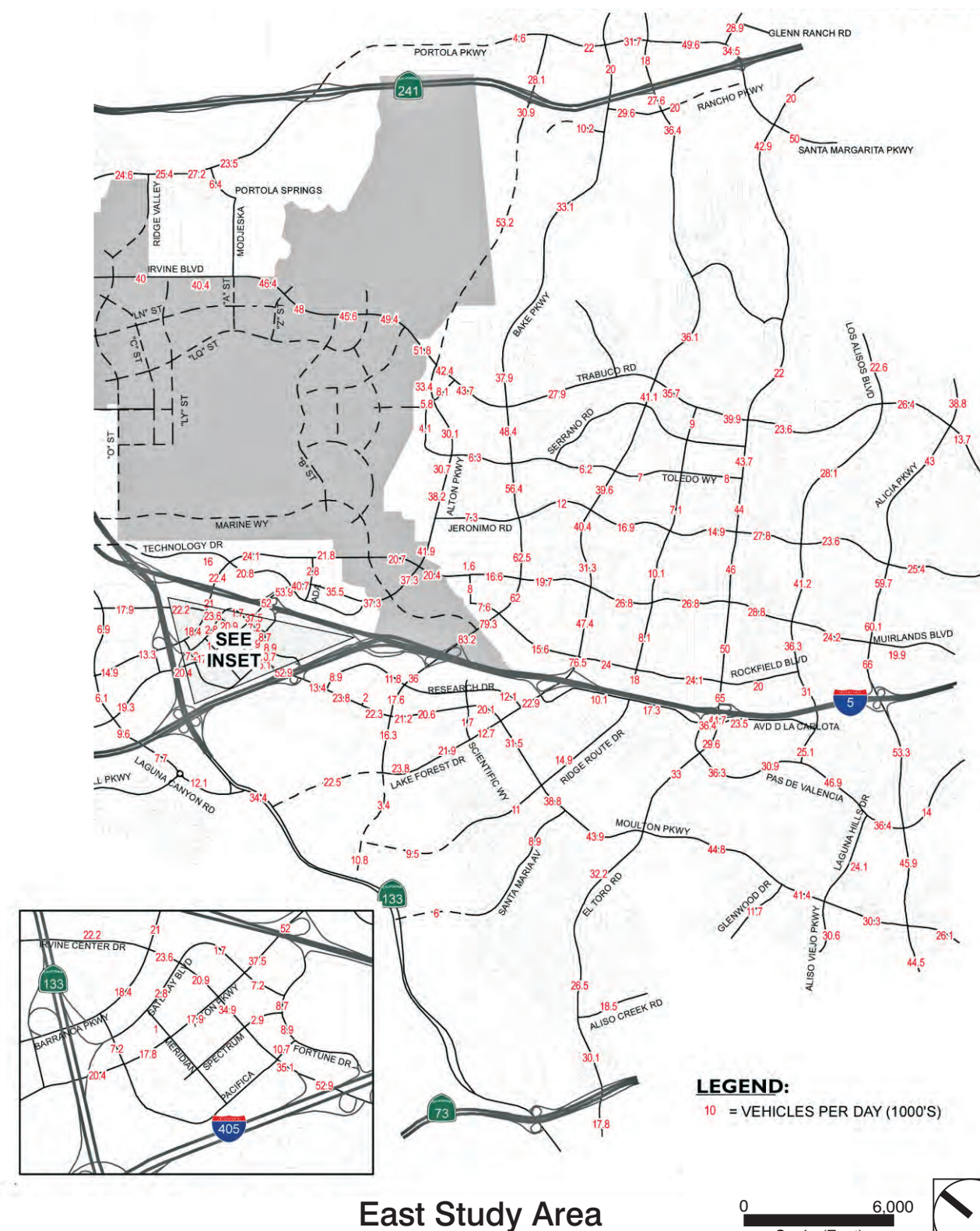
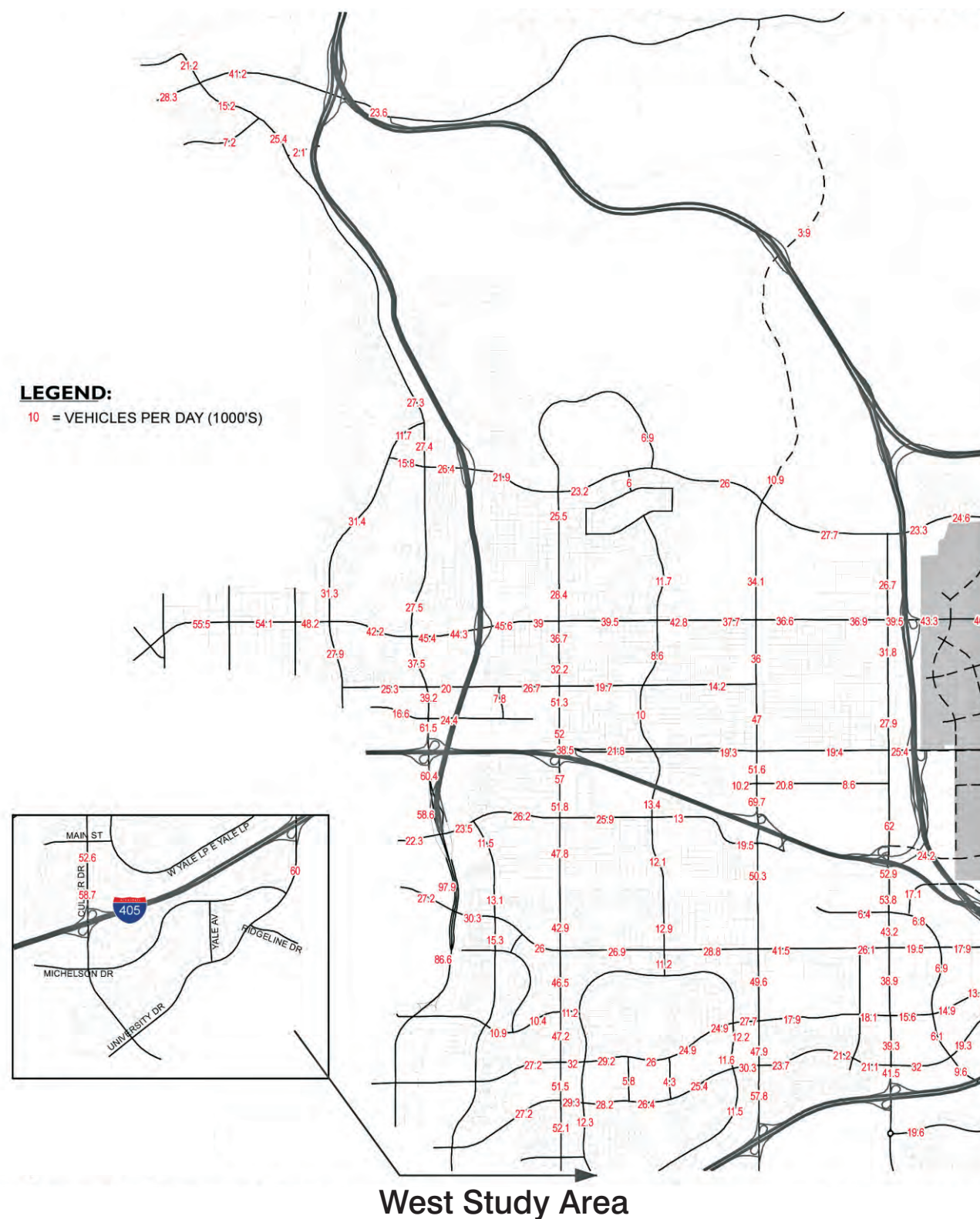
<i>Intersection</i>	<i>Peak Hour</i>	<i>2011 Approved Baseline</i>		<i>2012 Modified Project</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
Jeffrey Rd. & Roosevelt	AM	0.89	D	0.91	E
Jeffrey Rd. & Alton Pkwy.	AM	0.90	D	0.91	E
Laguna Cyn. & Old Laguna Cyn.	AM	0.92	E	0.94	E

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Post-2030 ADT Volumes with 2012 Modified Project Option 1 (1 of 2)

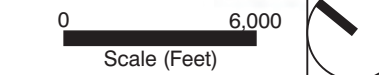


Post-2030 ADT Volumes with 2012 Modified Project Option 1 (2 of 2)

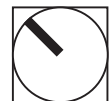


Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

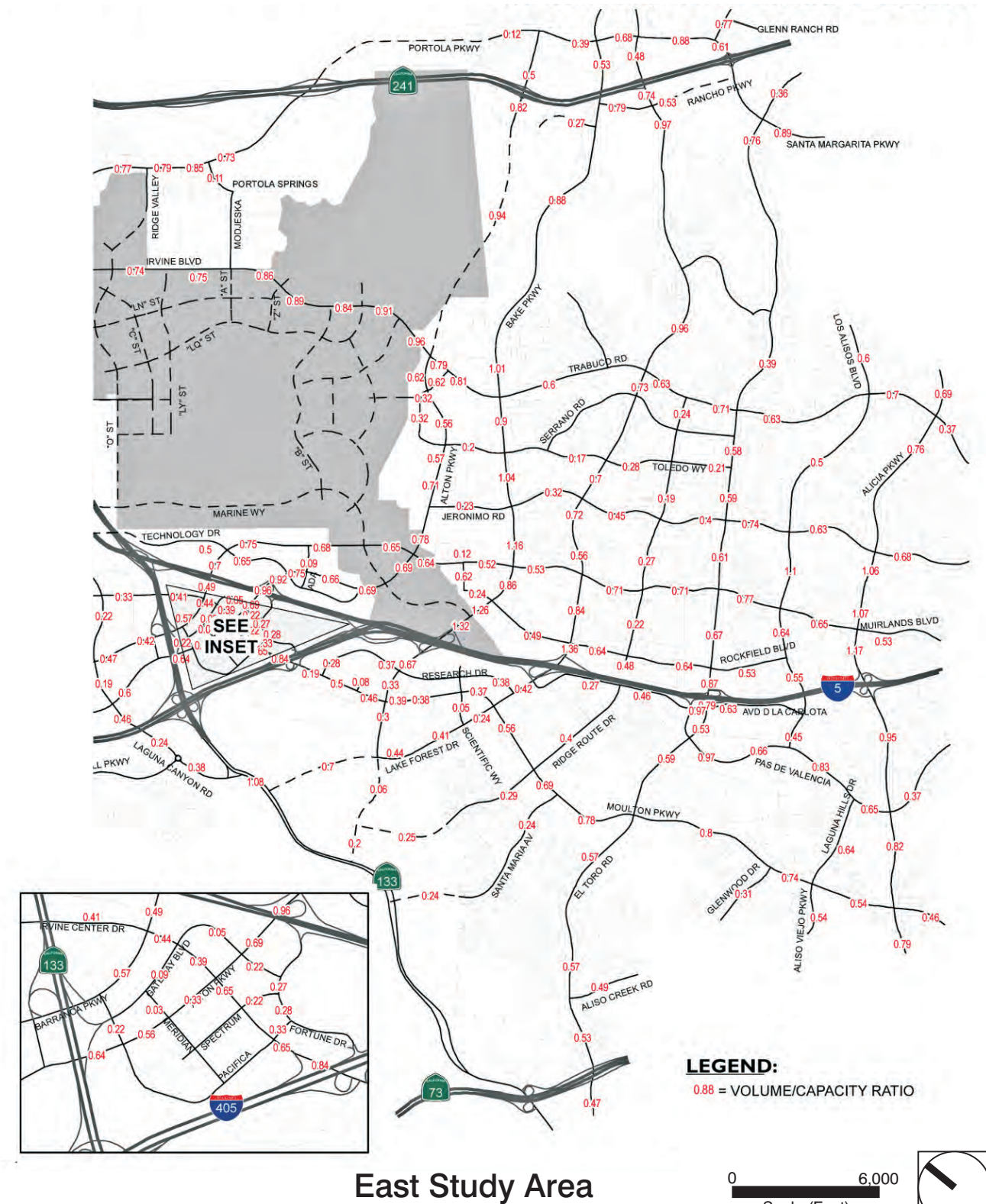
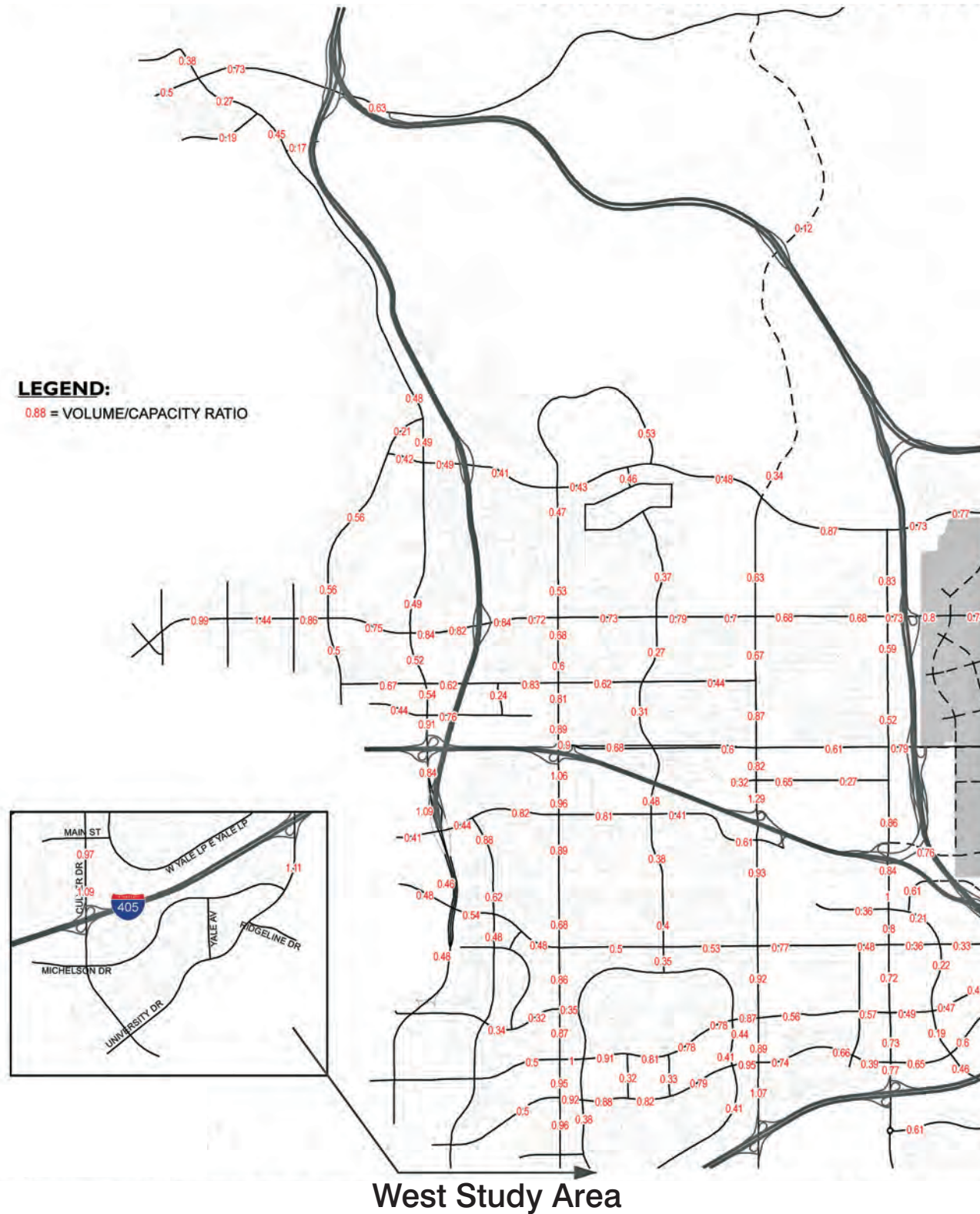


*Post-2030 ADT V/C Ratios with 2012
Modified Project Option 1 (1 of 2)*

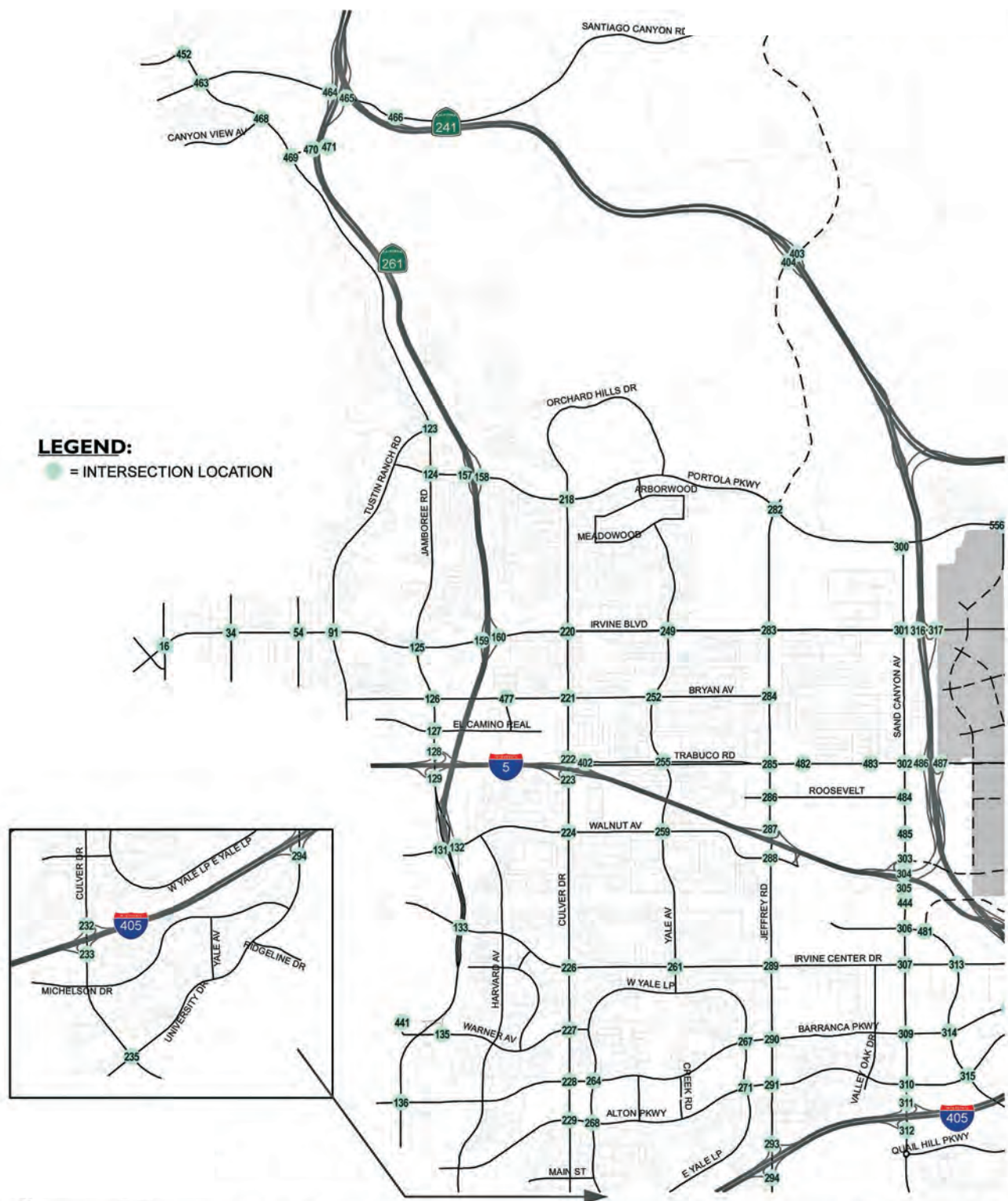


City of Irvine • Figure 5.12-27

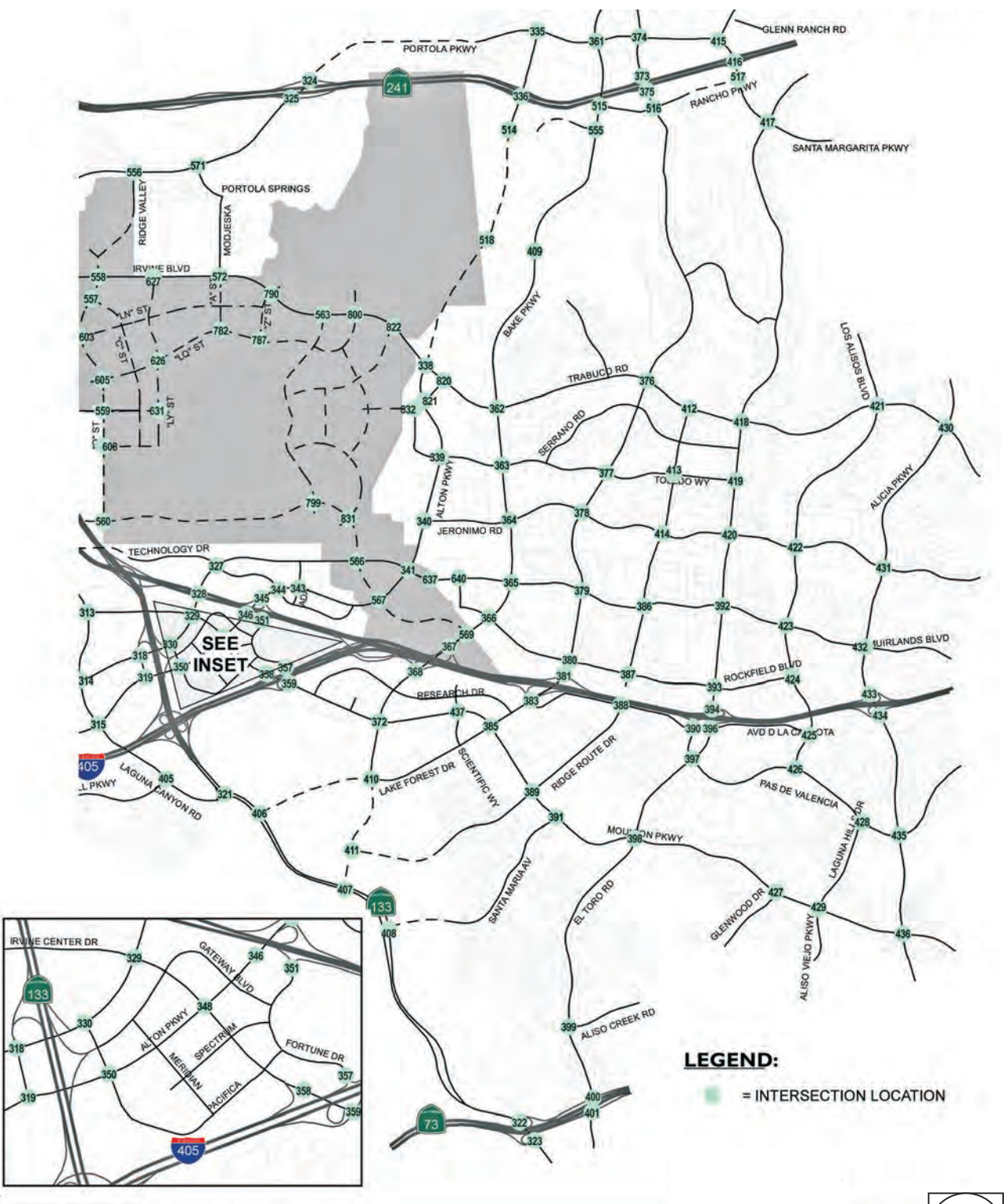
Post-2030 ADT V/C Ratios with 2012 Modified Project Option 1 (2 of 2)



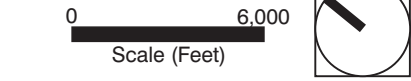
Post-2030 Intersection Location Map



West Study Area



East Study Area



Source: Urban Crossroads 2012
Heritage Fields Project 2012 GPA/ZC SSEIR

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To address concerns expressed by Caltrans regarding the performance of ramp intersections in the immediate vicinity of the Project, the freeway ramp intersections at Sand Canyon Avenue/I-5, SR-133/Irvine Boulevard, SR-133/Trabuco Road interchanges have been analyzed using the Highway Capacity Manual (HCM) methodology in addition to the ICU methodology. The resulting 2011 Approved Project (baseline) and 2012 Modified Project Option 1 peak hour levels of service based on the HCM methodology are summarized in Table 8-4 (HCM intersection LOS calculation worksheets are included in Appendix 8.3). The Sand Canyon/I-5 SB Ramps intersection includes delay and LOS information for two scenarios: "Currently Proposed Lanes (EB Shared Left-Right Turn Lane)" and "Alternative Configuration (EB Dual Right Lanes)". The eastbound (EB) approach lanes for the first scenario consist of two left turn lanes, one shared left-right lane, and one right turn lane. The EB approach lanes for the second scenario consist of two left turn lanes and two right turn lanes.

In addition to the peak hour HCM ramp analysis, a queuing analysis was carried out for the Sand Canyon Avenue/I-5 ramps. For the off-ramps at the Sand Canyon/I-5 interchange, the potential for exiting traffic to back up onto the I-5 mainline was evaluated by performing a detailed queuing analysis. The HCM intersection LOS results presented earlier for the Sand Canyon Avenue/I-5, SR-133/Irvine Boulevard ramp intersections and SR-133/Trabuco Road based on the HCM methodology provide estimates of the vehicle queue lengths on the off-ramp approaches at each intersection. Table 8-5 of the Traffic Study summarizes the longest 95th percentile queue length at each off-ramp under Year 2030 with 2012 Modified Project Option 1 peak hour conditions (HCM queuing analysis calculation worksheets are included in Appendix 8.4 in the Traffic Study). The results of the HCM analysis shows LOS "E" conditions with or without the 2012 Modified Project Option 1 at the I-5 NB Ramp /Sand Canyon intersection. A modified lane configuration (restriping to accomplish dual left turn and dual right turn lanes) on the eastbound approach to the I-5 SB Ramp intersection would avoid vehicle queues backing onto the freeway mainline. LOS "E" conditions also occur at the I-5 SB Ramp /Sand Canyon intersection with the 2012 Modified Project Option 1. The ultimate lane configuration would be subject to coordination and agreement between the City and Caltrans.

Post-2030 Peak Hour Freeway/Tollway Ramp Levels of Service, Option 1

Figure 5.12-29 illustrates the interchange locations where freeway/tollway ramps were analyzed based on Post-2030 conditions. 2011 Approved Project (baseline) and 2012 Modified Project Option 1 AM and PM peak hour ramp volumes and V/C ratios are summarized in Table 8-6 in the Traffic Study. Based on the peak hour ramp performance criteria and impact thresholds presented earlier, none of the freeway ramps are forecast exceed adopted impact thresholds with the 2012 Modified Project Option 1 based on Post-2030 conditions..

Post-2030 Peak Hour Freeway/Tollway Mainline Levels of Service, Option 1

The 2011 Approved Project (baseline) and 2012 Modified Project Option 1 AM and PM freeway/tollway mainline peak hour volumes and V/C ratios are summarized in Table 8-7 in the Traffic Study. Based on the peak hour mainline performance criteria and impact thresholds, the freeway mainline segment of the I-405 northbound, north of Jeffrey is forecast to exceed adopted impact thresholds with 2012 Modified Project Option 1 based on Post-2030 conditions.

Post-2030 Traffic Impacts with 2012 Modified Project Option 2

The following sub-sections summarize the resulting 2011 Approved Project (baseline) and 2012 Modified

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Project Option 2 traffic conditions for the various components of the study area circulation system including arterial roads and intersections, freeway/tollway mainline segments and freeway/tollway ramps.

Post-2030 Circulation System and Average Daily Traffic Volumes, Option 2

The Post-2030 2012 Modified Project Option 2 ADT volumes and corresponding V/C ratios are illustrated in Figure 5.12-30, and Figure 5.12-31, respectively.

Based on the ADT V/C performance criteria and impact thresholds discussed above, the following three (3) arterial roadway segments are potentially impacted by the 2012 Modified Project Option 2:

- Alton Pkwy (b/w Culver Dr and W. Yale Loop)
- Bake Pkwy (b/w Rockfield Bl and Marine Way)
- Jeffrey Rd (b/w Roosevelt and I-5 NB Ramps)

Consistent with the City's traffic study guidelines, these locations are further analyzed by examining peak hour levels of service. The resulting midblock peak hour V/C ratios for the arterial segments under Post-2030 with the 2012 Modified Project Option 2 conditions are summarized in Table 8-8 in the Traffic Study. As the summary table indicates, all arterial roadway segments are forecasted to operate at acceptable levels of service during the peak hour, therefore none of the arterial segments exceed adopted thresholds.

Post-2030 Peak Hour Intersection Levels of Service, Option 2

The Post-2030 with the 2012 Modified Project Option 2 AM and PM peak hour ICU results for the intersections illustrated in previous Figure 5.12-28 that are part of the study area are summarized in Table 8-9 in the Traffic Study. Actual turning volumes, lane geometrics and ICU calculation worksheets for the Post-2030 2012 Modified Project Option 2 scenario are included in Appendix 8.5 to the Traffic Study. Based on the peak hour intersection performance criteria and impact thresholds, the intersections of Jeffrey Road & Roosevelt, Jeffrey Road & Alton Parkway, and Laguna Canyon Road & Old Laguna Canyon exceed adopted impact thresholds under the 2012 Modified Project Option 2 scenario based on Post-2030 conditions, as shown on Table 5.12-12 below.

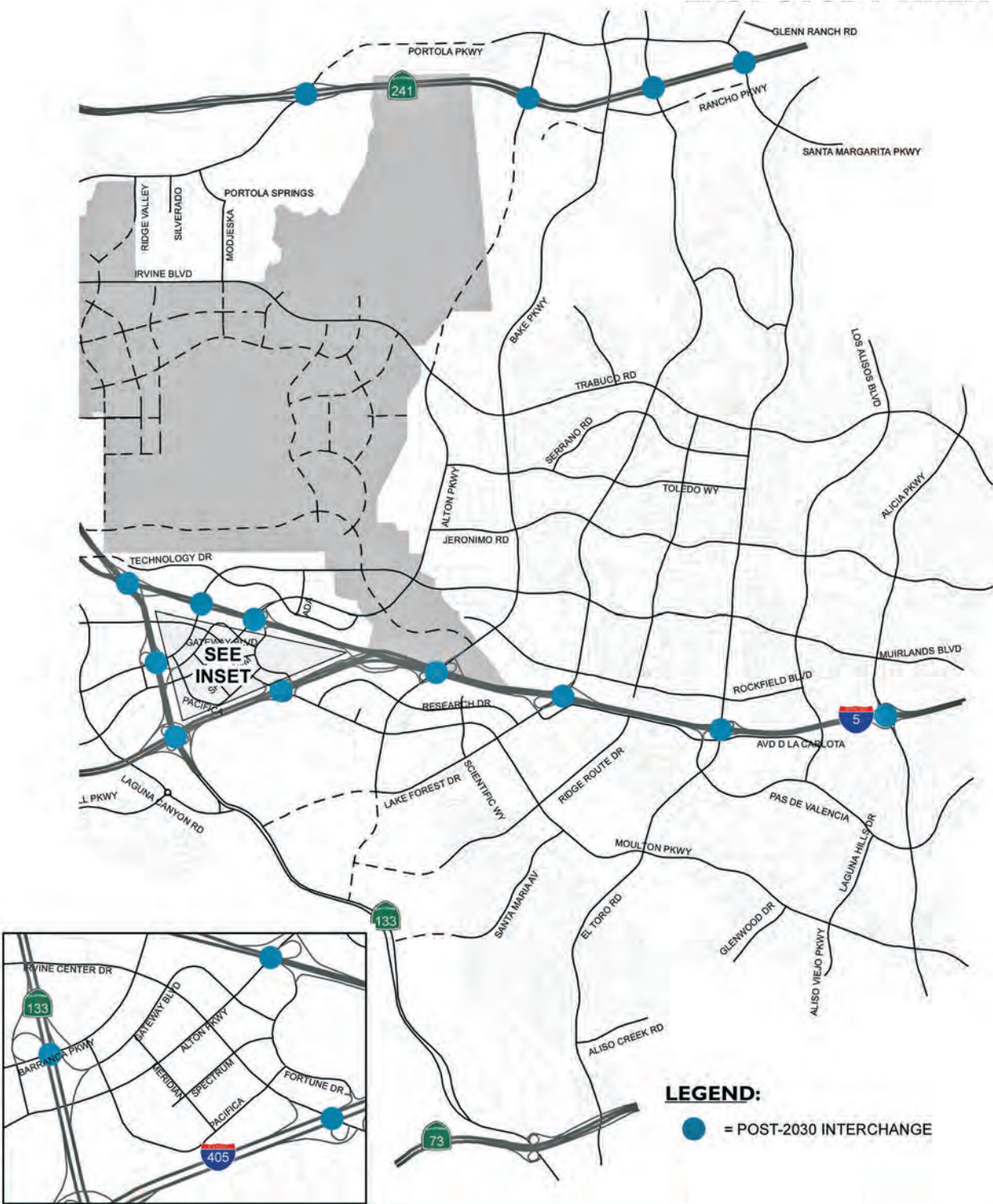
Table 5.12-12
Post-2030 Intersection ICU LOS With 2012 Modified Project Option 2
Project Impact Locations

<i>Intersection</i>	<i>Peak Hour</i>	<i>2011 Approved Baseline</i>		<i>2012 Modified Project</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
Jeffrey Rd. & Roosevelt	AM	0.89	D	0.92	E
Laguna Cyn. & Old Laguna Cyn.	AM	0.92	E	0.94	E

Post-2030 Freeway Interchange Locations



West Study Area



East Study Area

0 6,000
Scale (Feet)

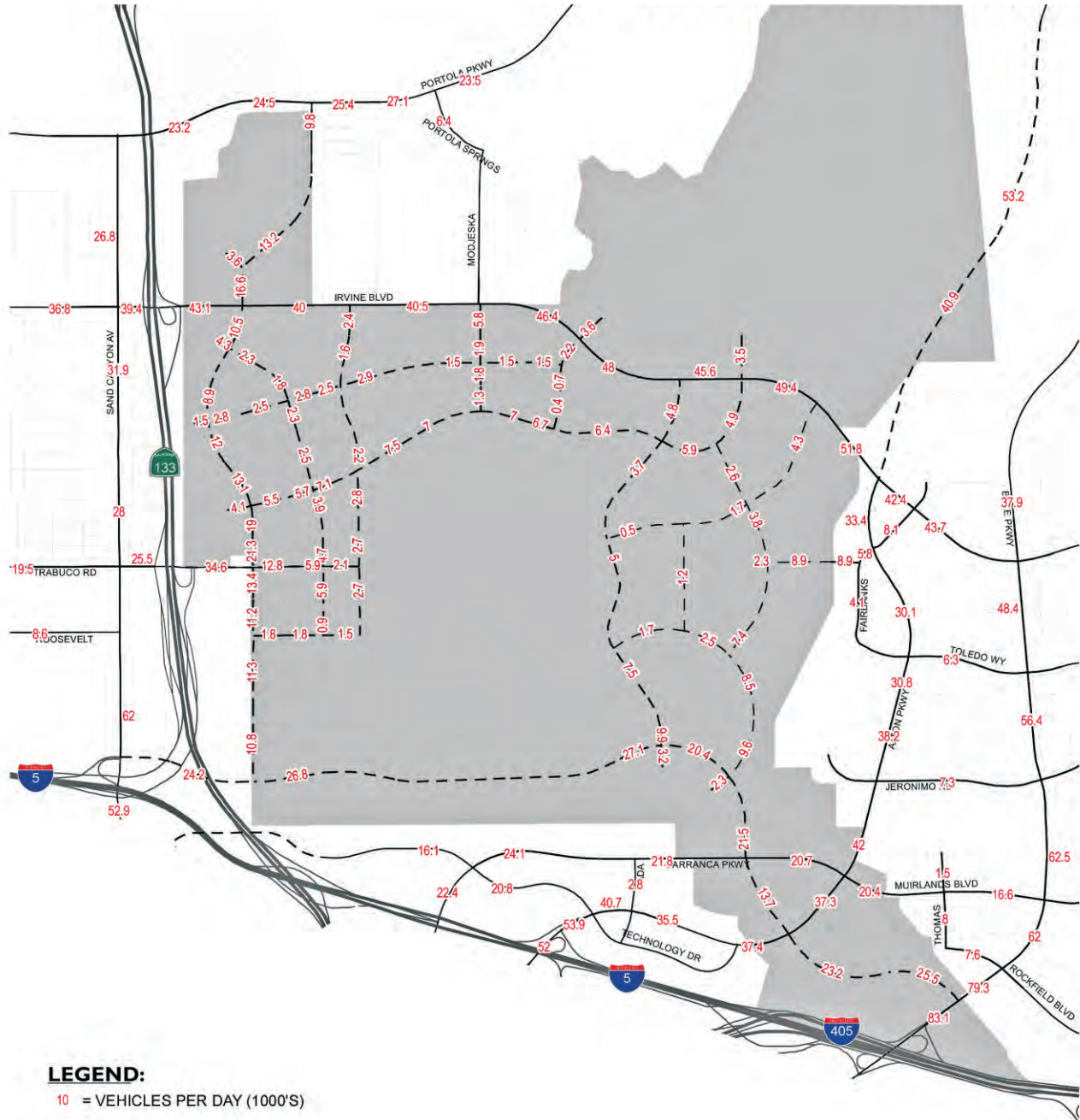


Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

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Post-2030 ADT Volumes with 2012 Modified Project Option 2 (1 of 2)



Project Area

0 3,000
Scale (Feet)

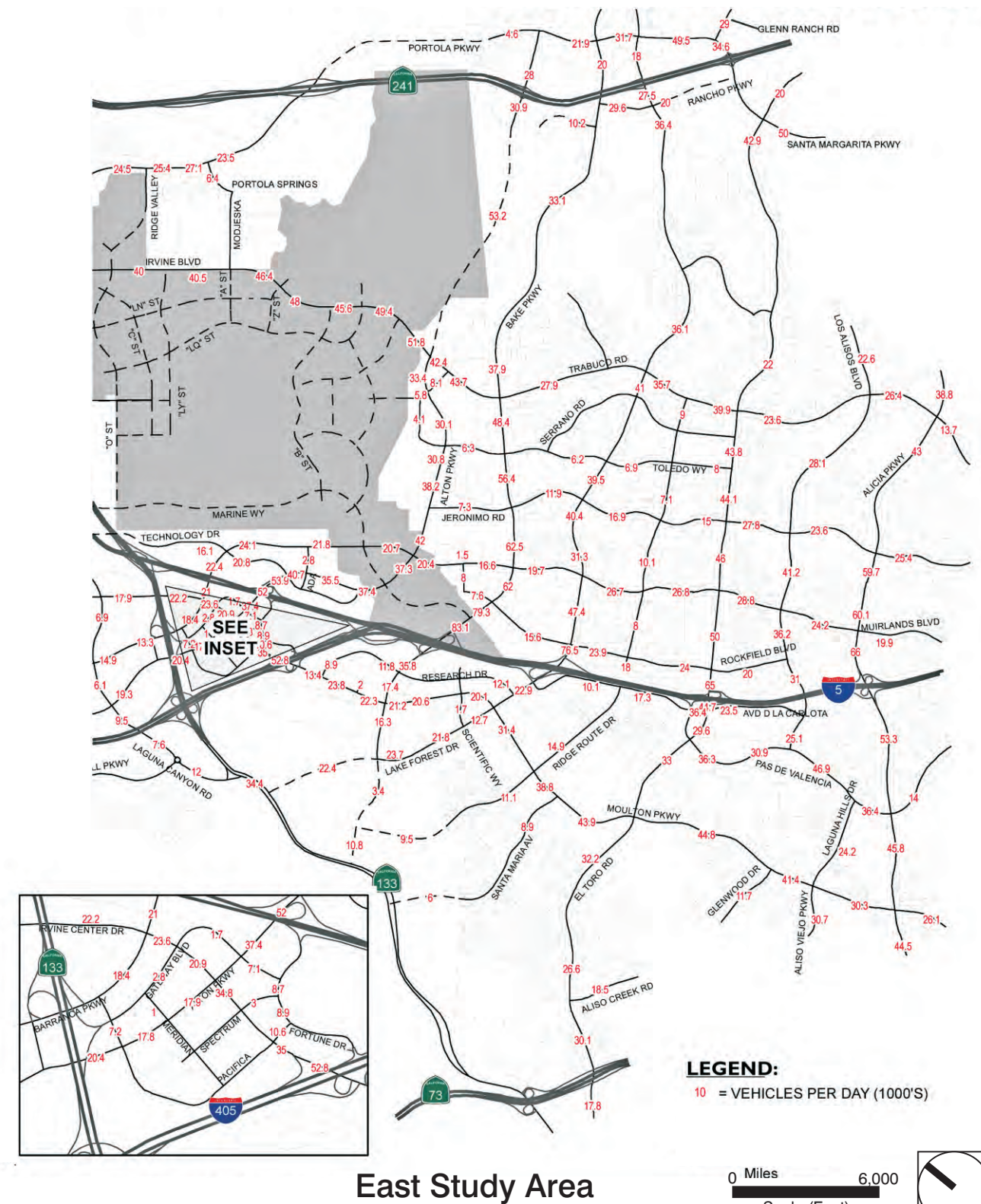


Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-30**

Post-2030 ADT Volumes with 2012 Modified Project Option 2 (2 of 2)



Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

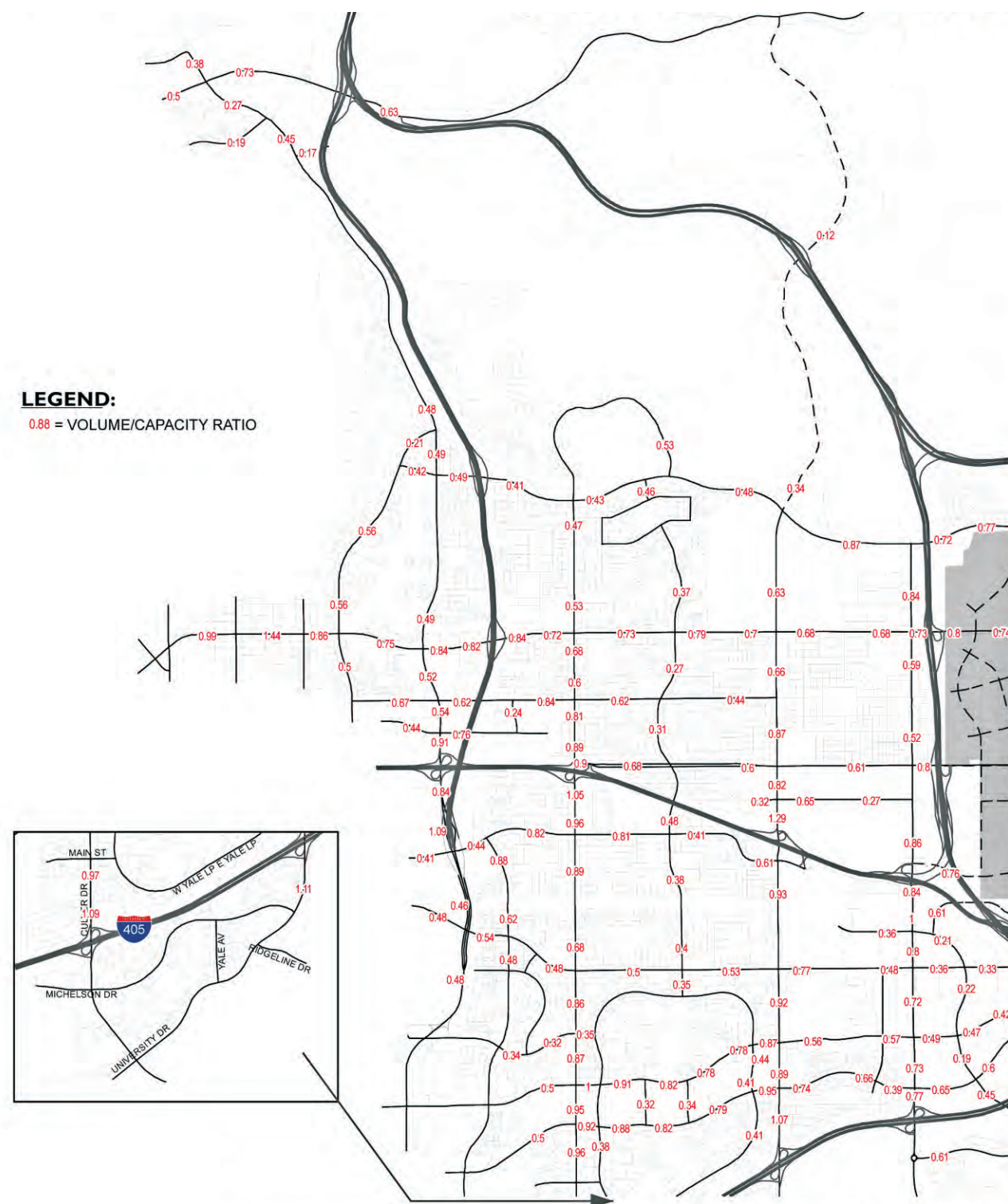
City of Irvine • **Figure 5.12-30**

*Post-2030 ADT V/C Ratios with 2012
Modified Project Option 2 (1 of 2)*

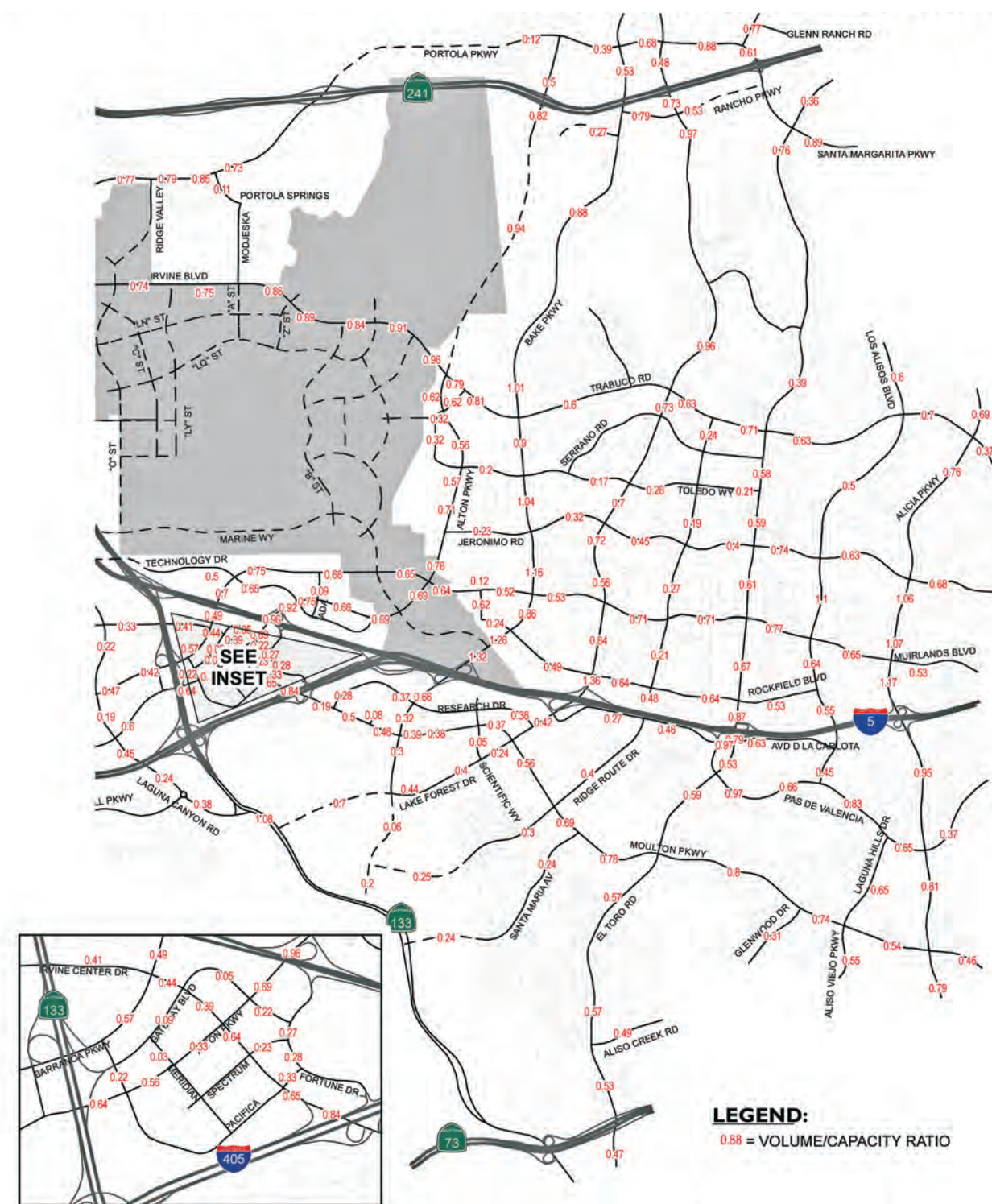


City of Irvine • Figure 5.12-31

Post-2030 ADT V/C Ratios with 2012 Modified Project Option 2 (2 of 2)



West Study Area



East Study Area

0 6,000
Scale (Feet)



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To address concerns expressed by Caltrans regarding the performance of freeway/tollway ramp intersections in the immediate vicinity of the Proposed Project Site, the freeway ramp intersections at Sand Canyon Avenue/I-5, SR-133/Irvine Boulevard, and SR-133/Trabuco Road interchanges have been analyzed using both the HCM methodology and the ICU methodology. The resulting Post-2030 Without Project and 2012 Modified Project Option 2 peak hour levels of service based on the HCM methodology are summarized in Table 8-11 in the Traffic Study (HCM intersection LOS calculation worksheets are included in Appendix 8.6 to the Traffic Study). In addition to the peak hour HCM ramp analysis, a queuing analysis was carried out for the Sand Canyon Avenue/I-5 ramps. For the off-ramps at the Sand Canyon/I-5 interchange, the potential for exiting traffic to back up onto the I-5 mainline was evaluated by performing a detailed queuing analysis. The HCM intersection LOS results presented earlier for the Sand Canyon Avenue/I-5, SR-133/Irvine Boulevard, and SR-133/Trabuco Road ramp intersections based on the HCM methodology provide estimates of the vehicle queue lengths on the off-ramp approaches at each intersection. Table 8-12 in the Traffic Study summarizes the longest 95th percentile queue length at each off-ramp under Post-2030 with the 2012 Modified Project Option 2 peak hour conditions (HCM queuing analysis calculation worksheets are included in Appendix 8.7 to the Traffic Study). The results of the HCM analysis show LOS “E” conditions with or without the 2012 Modified Project at the I-5 NB Ramp /Sand Canyon intersection. A modified lane configuration (restriping to accomplish dual left turn and dual right turn lanes the eastbound approach to the I-5 SB Ramp intersection would avoid vehicle queues backing onto the freeway mainline. LOS “E” conditions also occur at the I-5 SB Ramp /Sand Canyon intersection with the 2012 Modified Project. The ultimate lane configuration would be subject to coordination and agreement between the City and Caltrans.

Post-2030 Peak Hour Freeway/Tollway Ramp Levels of Service, Option 2

Figure 5.12-29 illustrates the interchange locations where freeway/tollway ramps were analyzed based on Post-2030 conditions. The Post-2030 with 2012 Modified Project Option 2 AM and PM peak hour ramp volumes and V/C ratios are summarized in Table 8-13 in the Traffic Study. None of the freeway ramps are forecast exceed adopted impact thresholds with the 2012 Modified Project Option 2 based on Post-2030 conditions.

Post-2030 Peak Hour Freeway/Tollway Mainline Levels of Service, Option 2

The Post-2030 Without Project and 2012 Modified Project Option 2 AM and PM freeway/tollway mainline peak hour volumes and V/C ratios are summarized in Table 8-14 in the Traffic Study. Based on the peak hour mainline performance criteria and impact thresholds discussed above, the freeway mainline segment of I-405 northbound, north of Jeffrey is forecast to exceed adopted impact thresholds under the 2012 Modified Project Option 2 scenario in Post-2030 conditions.

Post-2030 Mitigation Summary

In this sub-section, mitigation measures are presented for the intersections identified as being impacted by the 2012 Modified Project based on Post-2030 conditions. It should be noted that the City has established the NITM Program to implement and expedite circulation mitigation measures identified in previous certified CEQA documents. The NITM Program provides a funding mechanism for the coordinated and phased installation of required traffic and transportation improvements established in connection with land use entitlements for PAs 1, 5, 6, 8, 9, 30, 40 and 51. As established by City Ordinance No. 03-20, the 2011 Approved Project is included in this program and, as such, is required to pay its fair share toward the

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List of NITM Improvements included within the established NITM Program. This NITM fee will be updated in accordance with the NITM Ordinance after approval of the 2012 Modified Project. (TRAN 3).

In addition to the PA 30 and PA 51 NITM fair share fees addressed above, the following discusses the specific mitigation measures proposed for the Post-2030 impacts of the 2012 Modified Project identified above. The mitigation measures are designed to address the 2012 Modified Project's impacts by improving the LOS at each impacted location.

Option 1 Impact Locations

Three intersections exceed adopted impact thresholds with the 2012 Modified Project with Option 1:

- Jeffrey Rd. & Roosevelt
- Jeffrey Rd. & Alton Pkwy.
- Laguna Cyn. & Old Laguna Cyn

At the Jeffrey Road / Roosevelt intersection, the project mitigation is conversion of the eastbound shared through/right lane into a through lane, and addition of a second right turn lane.

At the Jeffrey Road / Alton Parkway intersection, the project mitigation is provision of an eastbound standard right-turn lane with right-turn overlap phase resulting in an ultimate eastbound lane configuration of 2 left-turn lanes, 2 through lanes, and 1 right-turn lane.

The project mitigation at the Laguna Canyon/Old Laguna Canyon intersection identifies ATMS at this location, subject to approval by the Director of Public Works. An alternate physical improvement is the addition of a fourth northbound through lane. If it is desired to utilize one of these improvement options as a substitution to an identified NITM improvement at this location, this request would be subject to approval by the Director of Public Works in consultation with the NITM Committee. If pending projects are approved, the mitigation improvement will no longer be needed. Table 5.12-13 contains the analysis of Post-2030 Option 1 impact locations with the proposed mitigation:

*Table 5.12-13
Post-2030 LOS with 2012 Modified Project
Option 1 Impact Locations with Proposed Mitigation*

<i>Intersection</i>	<i>Peak Hour</i>	<i>2011 Approved Project (Baseline)</i>		<i>2012 Modified Project</i>		<i>With Improvement</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
286. Jeffrey Rd. & Roosevelt	AM	0.89	D	0.91	E	0.88	D
291. Jeffrey Rd. & Alton Pkwy.	AM	0.90 ¹	D	0.91 ¹	E	0.89 ¹	D
321. Laguna Cyn. & Old Laguna Cyn.	AM	0.92	E	0.94	E	0.89 ¹	D
-Alternate improvements	AM					0.82	D

Source: Urban Crossroads, 2012.

¹ ATMS credit (0.05) has been applied.

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Project fair share participation in a directional capacity enhancement equivalent to a single general purpose travel lane at one freeway mainline segment (I-405 northbound, north of Jeffrey) mitigates the 2012 Modified Project Option 1 contribution to a cumulative impact at that location.

Option 2 Impact Locations

Post-2030 AM and PM peak hour intersection capacity utilization (ICU) results indicate the same three intersections impacted by the 2012 Modified Project with Option 1 are also impacted with Option 2. At these three locations, the Option 1 mitigation measures (described above) also mitigate Option 2 impacts:

- Jeffrey Rd. & Roosevelt
- Jeffrey Rd. & Alton Pkwy.
- Laguna Cyn. & Old Laguna Cyn

Table 5.12-14 contains the analysis of Post-2030 Option 2 impact locations with the proposed mitigation:

*Table 5.12-14
Post-2030 LOS with 2012 Modified Project
Option 2 Impact Locations with Proposed Mitigation*

<i>Intersection</i>	<i>Peak Hour</i>	<i>2011 Approved Project (Baseline)</i>		<i>2012 Modified Project</i>		<i>With Improvement</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
286. Jeffrey Rd. & Roosevelt	AM	0.89	D	0.92	E	0.88	D
291. Jeffrey Rd. & Alton Pkwy.	AM	0.90 ¹	D	0.93 ¹	E	0.89 ¹	D
321. Laguna Cyn. & Old Laguna Cyn.	AM	0.92	E	0.94	E	0.89 ¹	D
-Alternate improvements						0.82	D

Source: Urban Crossroads, 2012.

¹ ATMS credit (0.05) has been applied.

Project fair share participation in a directional capacity enhancement equivalent to a single general purpose travel lane at one freeway mainline segment (I-405 northbound, north of Jeffrey) mitigates the 2012 Modified Project Option 2 contribution to a cumulative impact at that location.

5.12.4.6 2012 Modified Project with Optional Conversion

The 2012 Modified Project also includes the option to convert up to 535,000 square feet of Multi-Use to up to 889 base units and up to 311 DB Units, granted pursuant to State law. The location, type and number of converted units are unknown at this time. This optional conversion is expressly conditioned to stay within the trip parameters of the Heritage Fields Project 2012 GPA/ZC Traffic Study and is subject to further traffic analysis.

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5.12.4.7 Rockfield Boulevard MPAH Network, Sensitivity Analysis

Buildout conditions for Options 1 and 2 are analyzed to determine if any level of service deficiencies are created within the study area with the buildout of Rockfield Boulevard as currently included on the Orange County Master Plan of Arterial Highways (MPAH), when compared against the buildout of the proposed project with the deletion of Rockfield Blvd extension to Marine Way. This analysis will be used to process the proposed MPAH amendment to delete the extension of Rockfield to Marine Way. The deletion of the Rockfield extension is subject to coordination with adjacent cities and approval by the OCTA Board of Directors.

In the event that the Rockfield MPAH change does not occur and the Rockfield connection to Marine Way is ultimately constructed, no additional traffic impacts occur with the 2012 Modified Project with Option 2 on arterial roadway segments, arterial intersections, mainline freeway segments or freeway ramps for Post-2030 conditions. With Option 1, the SR-133 NB Loop On-Ramp at Barranca Parkway is impacted if the Rockfield MPAH change does not occur and the Rockfield connection to Marine Way is ultimately constructed.

The SR-133 northbound loop on-ramp at Barranca Parkway is not impacted under the 2015 pending plus project condition with the 2012 Modified Project Option 2. The proposed mitigation improvement for this ramp is not a NITM Program improvement. In the event that the MPAH change is not approved and the 2012 Modified Project Option 1 is implemented with construction of the Rockfield extension to Marine Way, the Option 1 Project will also participate on a NITM methodology fair share basis in the conversion of the HOV preferential lane at the on-ramp to a second metered mixed-flow lane.

IMPACT 5.12-2: THE MODIFIED PROJECT COMPLIES WITH ADOPTED POLICIES, PLANS, AND PROGRAMS FOR ALTERNATIVE TRANSPORTATION. [IMPACT T-6]

Impact Analysis: Various Class 1 (Off-Street) and Class 2 (On-Street) bikeways through the Proposed Project Site have been anticipated in the City of Irvine General Plan Trails Network. It is anticipated that the proposed development in the 2012 Modified Project would expand opportunities for bikeway and pedestrian facilities, with additional bikeways in Districts 5 and 6, and improved connectivity to the new high school, to be considered in conjunction with future maps/master plans and amendments to the Master Landscape and Trails Plan.

Figure 5.12-32, *Project Area Bikeways and Trails*, illustrates the potential on-site and adjacent bikeways and trails for the Project area. In addition to the extensive network of trails already approved as part of the 2011 Approved Project, interconnected networks of two-lane roadways (local streets, local collectors and commuters) could link the on-site schools, shopping centers, employment areas, and public facilities throughout the core of Combined PA 51.

The trail system would be designed to utilize crosswalks at traffic signals, stop signs and roundabouts in order to provide safe crossings of roadways at intersections. At mid-block crossings of two-lane roads, curb extensions (narrowing) and ped signs are recommended to improve safety for pedestrians.

Moreover, various transit services to the Proposed Project Site have been anticipated in the Irvine Transit Vision, a framework for bus and shuttle services that connect with OCTA local and regional bus operations and regional rail services via the Irvine Metrolink Station. The 2012 Modified Project expands opportunities for such services to occur by providing a continuous Secondary arterial connection along

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“O” Street / Ridge Valley from Marine Way to Portola Parkway, and a direct north-south Commuter roadway connection along “B” Street from Irvine Boulevard to Marine Way near the Irvine Metrolink Station.

Specific details regarding the expansion of the trail network would be considered in conjunction with future maps/master plans and amendments to the Master Landscape and Trails Plan.

Figure 5.12-33, *Project Area Transit Features*, illustrates potential transit services for the Proposed Project Site which are comparable to the routes presented in the recommended Preferred Alternative and Complementary OCTA Services scenarios evaluated in the Irvine Transit Vision report. The potential service routes are conceptual; the routing, funding and operation of future City or OCTA services are yet to be determined. The purpose of this concept planning effort is to determine potential transit stop locations and ensure that physical site planning for the 2012 Modified Project districts will accommodate appropriate pedestrian connectivity to the potential stop locations.

Thus, as discussed in more detail in Section 5.7, *Land Use*, the 2012 Modified Project achieves goals of the City’s General Plan for effective non-motorized transportation through enhanced local street connectivity, an extensive network of walkways and bikeways, and the arrangement of land uses for access by various modes of transportation.

5.12.5 Cumulative Impacts

The geographic scope for traffic includes cumulative growth projections for Orange County that are reflected in Orange County Projections (“OCP”)-2004, as modified by more recent data as described in Section 4.5, *Cumulative Impact Assumptions*, of this DSSEIR. Past projects in Orange County cities and unincorporated areas have converted undeveloped and agricultural land to urban uses resulting in area residential and employment population increases and associated demand for expansions of roadway systems. The contribution of these past projects to area growth is also reflected in OCP-2006 and OCP-2010. As described in Section 5.9, *Population and Housing*, the Orange County Projections are prepared, and periodically updated, by the Center for Demographic Research at California State University, Fullerton, based on a Memorandum of Understanding with the Orange County Council of Governments (OCCOG). General Plan information from each jurisdiction within Orange County is used in the development of growth projections for the County. The OCP growth projections, as adopted by the OCCOG, are then incorporated into traffic models approved for use by the Orange County Transportation Authority (i.e., the Orange County Transportation Analysis Model - OCTAM), which provides the countywide traffic model basis for more localized traffic models, such as that used by the City (i.e., the Irvine Transportation Analysis Model - ITAM). As such, the traffic modeling for future conditions includes areawide growth as anticipated in adopted growth projections (e.g., OCP-2004).

Because the modeling used for the traffic analyses contained in this Section 5.12, *Transportation and Traffic*, incorporates OCGP-2004 projections, the analyses assess the traffic impacts of all cumulative development reasonably anticipated by Year 2015, Year 2030 and Post-2030. As discussed above, most intersections and roadway/freeway/tollway/ramp segments will operate at acceptable levels of service with the existing or planned improvements, although some may require additional improvements, as described in Section 5.12.6, *Applicable Mitigation Measures* from the 2011 Certified EIR and Section 5.12.9, *Additional Mitigation Measures for the 2012 Modified Project*. It should be noted, however, that it has been anticipated in the traffic analysis that the cumulative impact of 2012 Modified Project traffic along with other regional growth at the identified ramp and freeway locations will be

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largely mitigated through a combination of regional programs that are the responsibility of other agencies such as Lake Forest and CalTrans. The Applicant will contribute its fair share to these regional programs, as applicable. However, if these programs are not implemented by the agencies with the responsibility to do so, the cumulative freeway/tollway ramp impacts would remain significant and unavoidable. Under these circumstances, the 2012 Modified Project could result in a cumulatively significant traffic impact that may remain significant and unavoidable.

Pending Projects Sensitivity Analysis

Six future “pending” scenarios (2015, 2030, and Post 2030, each with the 2012 Modified Project Options 1 and 2) are analyzed to determine if any additional level of service deficiencies are created within the study area with pending development projects and changes to the MPAH. Pending with Project scenarios are compared against 2011 Approved Project conditions (with the pending projects) so that any deficiencies on the study area circulation system associated with the pending projects in combination with the 2012 Modified Project can be identified.

Although several arterial roadway segments exceed their theoretical daily capacity with or without the pending-plus-project scenario, they are projected to operate at acceptable levels of service during peak hours for all future conditions (2015, 2030, and Post-2030 conditions) included in the sensitivity analysis.

2015 With Pending Projects, Options 1 and 2

The 2015 AM and PM peak hour intersection capacity utilization (ICU) results indicate that none of the intersections are forecast to exceed adopted thresholds with the pending-plus-project scenario for 2012 Modified Project Option 1. Although several mainline freeway segments and freeway ramps are projected to operate at LOS F during peak hours, the pending-plus-project 2015 scenario for 2012 Modified Project Option 1 does not cause traffic to exceed adopted impact thresholds.

The SR-133 NB loop on-ramp from Barranca Parkway is forecast to exceed adopted impact thresholds for the Year 2015 with the pending-plus-project 2012 Modified Project Option 2 conditions. The project mitigation at this location is fair share participation (on a NITM methodology fair share basis) in converting the HOV preferential lane at the on-ramp to a second metered mixed-flow lane (capacity = 1,500). This fair share improvement results in a $v/c = 0.83$ (LOS “D”). No intersections are forecast to exceed adopted thresholds with the pending-plus-project scenario for 2012 Modified Project Option 2. Although several mainline freeway segments are projected to operate at LOS F during peak hours, the pending-plus-project 2015 scenario for Option 2 does not cause traffic to exceed adopted impact thresholds.

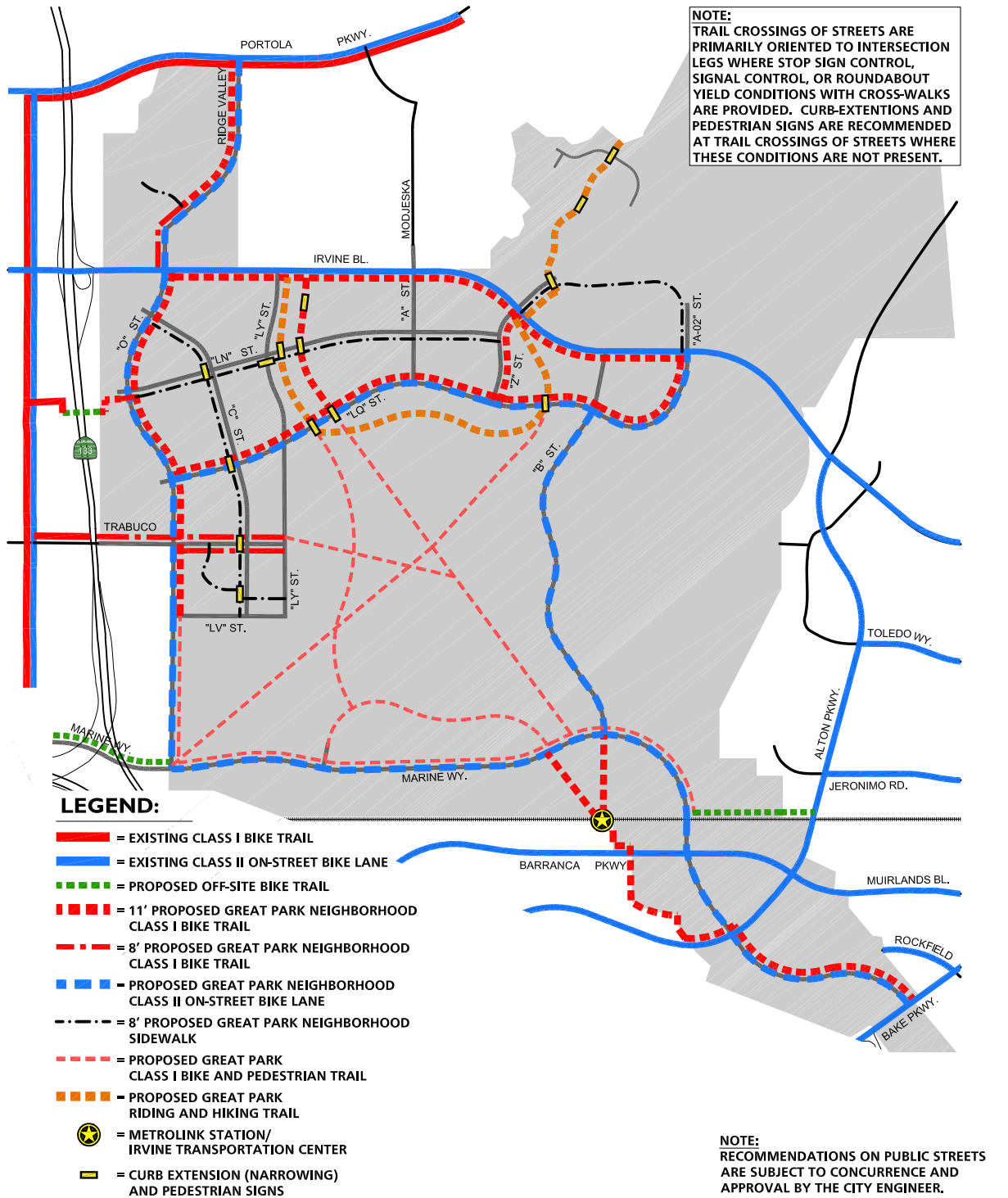
2030 With Pending Projects, Options 1 and 2

For 2030 pending-plus project conditions, there are seven intersection impacts for Option 1, six intersection impacts for Option 2 (six are previously identified locations with no additional mitigation for the pending condition), one ramp impact for Options 1 and 2 (previously identified location with no additional mitigation for the pending condition), and one directional freeway mainline fair share impact for Options 1 and 2. Refer to Table 9-25 of the Traffic Study for specific impact locations.

If the pending projects are approved, 2012 Modified Project Options 1 and 2 mitigation at the El Toro Road / Portola Parkway intersection consists of fair share participation in the addition of a southbound right turn overlap phase (a fully funded LFTM improvement).

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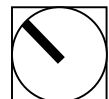
Project Area Bikeways and Trails



Source: Urban Crossroads 2012

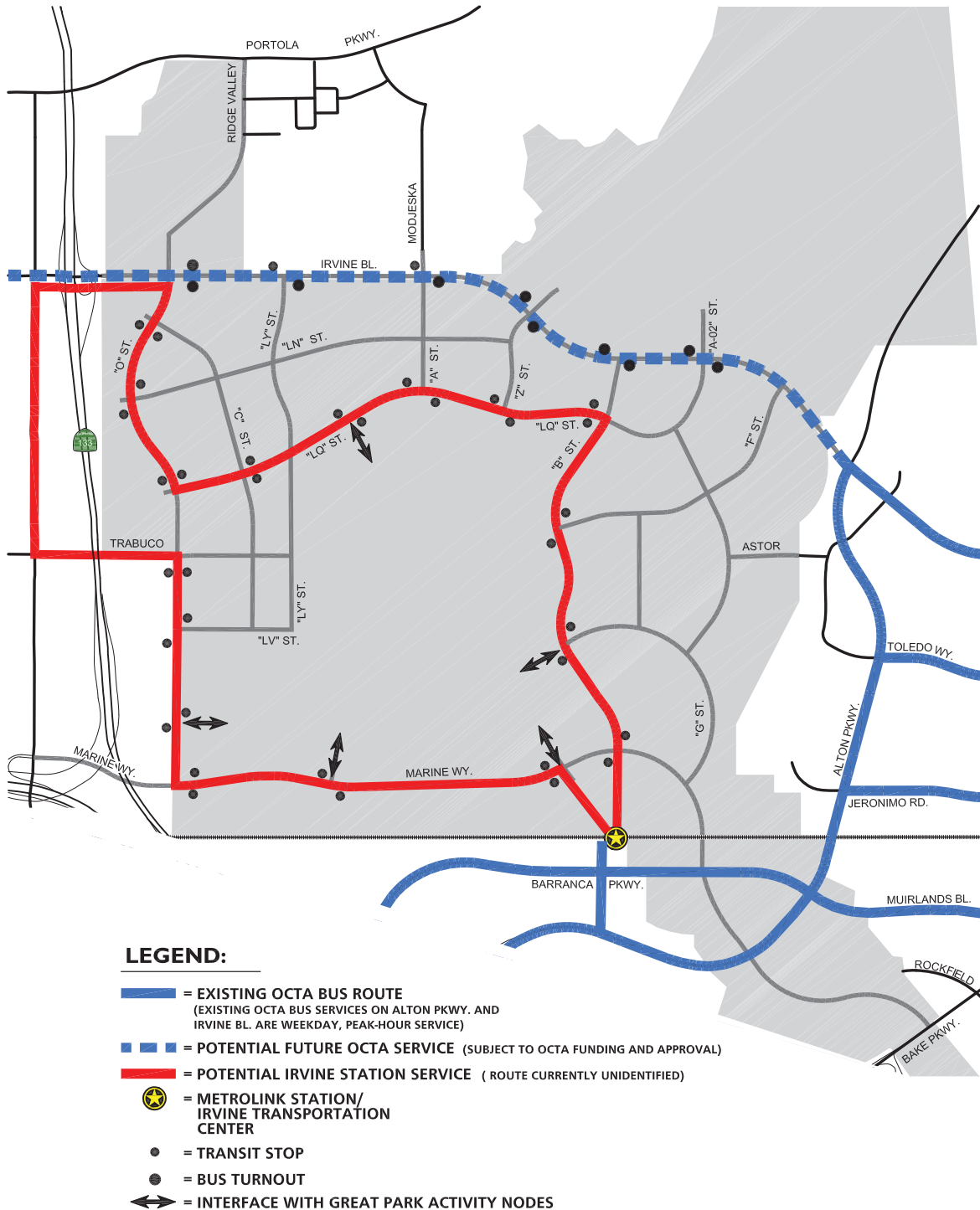
Note: For illustrative purposes only. Not intended to depict the approved Master Landscape and Trails Plan.

0 1,500 3,000
Scale (Feet)



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Project Area Transit Features



0 1,500 3,000
Scale (Feet)



Source: Urban Crossroads 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.12-33**

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If the pending projects are approved, the 2012 Modified Project will be required to contribute its fair share for a directional capacity enhancement (equivalent to a single general purpose lane) at the freeway mainline segment of the I-5 Northbound, n/o Culver in order to mitigate the 2012 Modified Project Options 1 and 2 cumulative impacts. Per NITM, the fair share of improvement cost is calculated based the incremental daily volume change from the 2011 Approved Project to the 2012 Modified Project, divided by all traffic at that improvement location, including existing and future traffic.

Post-2030 With Pending Projects, Options 1 and 2

For post-2030 pending project conditions, there are two intersection impacts for Options 1 and 2 (previously identified locations with no additional mitigation for the pending condition), one ramp impact for Options 1 and 2 (previously identified location with no additional mitigation for the pending condition) and no directional mainline impacts. Refer to Table 9-26 of the Traffic Study for specific impact locations.

5.12.6 Applicable Mitigation Measures from the 2011 Certified EIR

The following mitigation measures were included in the 2011 Certified EIR. These mitigation measures are also included in the 2012 Modified Project, and additional mitigation measures have been added for the purposes of this DSSEIR. This DSSEIR proposes to make certain modifications to the mitigation measures adopted by the City for the Approved Project. In addition, the language of TRAN 1 from the Certified EIR is proposed to be modified as indicated below. Modifications to the original mitigation measure are identified in ~~strikeout~~ text to indicate deletions and underlined to signify additions.

TRAN1 was modified by the City and approved as shown with 2nd AVTTM 17008 (PC Resolution 11-3109). References to Existing Planning Area 30 are proposed to be removed since the 2012 Modified Project's proposed GPA/ZC consolidates Existing PAs 30 and 51 into one PA to be designated Combined PA 51.

TRAN1 Prior to the approval of any final map of a subsequent subdivision map (other than a financing and conveyance map) ~~allocating for any land use, excluding single family land uses (single family land use includes single family detached and single family attached projects), parks, schools, daycare, and religious institutions, that allocates building intensity within Planning Areas 30 and 51, and prior to issuances of any building permits for permanent improvements~~ within Planning Areas 30 and 51, the landowner or subsequent project applicant shall either (i) apply for annexation of any areas within the final map to the Irvine Spectrum Transportation Management Association (TMA) ("Spectrumotion") in accordance with Article X of the recorded Declaration of Covenants, Conditions and Restrictions (CC&Rs) for the Irvine Spectrum TMA, including any supplementary or amended CC&Rs, to reduce traffic, air quality and noise impacts or (ii) develop and implement a similar transportation management plan containing the elements and meeting the criteria described below as approved by the Director of Public Works. The transportation management plan shall be implemented via payment of assessment dues to an organization similar to Spectrumotion for all land uses, with the exceptions noted above. While affordable housing units will be included, their assessment fees will be covered by other remaining adjacent land uses. The implementation (payment of assessment dues) for either option described above shall occur prior to issuance of building permit(s):

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Transportation Management Plan (TMP)

The development and implementation of a Transportation Management Plan is an identified mitigation measure to manage transportation access for Planning Areas ~~30 and~~ 51. This document summarizes the key elements of the TMP.

A. Introduction

The purpose of this document is to provide an outline for a comprehensive TMP for the Planning Areas ~~30 and~~ 51 (“Great Park TMP”). This report is not intended to provide the specific details of the plan, but rather to highlight the key components and provide direction for subsequent detailed planning and implementation activities. When preparation of the TMP is undertaken, all of the agency and stakeholders will be invited to provide input.

The applicant may elect to annex Combined PA 51 ~~and a portion of Planning Area 30~~ into the Irvine Spectrum Transportation Management Association (Spectrumotion). Spectrumotion is a private, non-profit Transportation Management Association (TMA) formed to reduce traffic congestion in Irvine Spectrum. Spectrumotion promotes, markets, and subsidizes alternatives to solo-commuting and assists the business community in complying with trip reduction related requirements. Membership is mandatory to property owners with deed restrictions requiring participation in the TMA. Membership dues provide the funding for the Association and its programs, which offer a variety of employer and commuter services focused on reducing vehicular trip generation.

In the event that the applicant elects not to annex into Spectrumotion, a TMP similar to that provided by Spectrumotion will be developed and implemented. This document sets forth the components of the TMP should it be necessary.

B. Transportation Management Plan Framework

The key elements of the Great Park TMP are set forth below:

New Hire Orientation: Inform newly hired employees of commuting services available to them.

Public Transportation Pass Sales: Provide a central location for purchase of passes to available transit services ((i.e., OCTA buses, Metrolink, Amtrak, etc.).

Vanpool and Carpool Formation Assistance: Perform all of the administrative work necessary to establish van pools and car pools.

On-site Promotions: Hold rideshare promotions at work sites and assist in employer assistance promotions.

Telecommuting/Alternative Work Schedule Consulting: Assist employers in developing and implementing a telecommuting or alternative work schedule program.

Personalized Commute Consulting: Provide a personalized commute profile to any commuter, which includes carpool match list containing the names of other commuters in the North Irvine Sphere that live and work near each other.

Website: Maintain a website with all of their program information available.

Rideshare Promotions: Conduct high visibility rideshare promotions as a means to advertise its services.

Subsidies: To the extent financially feasible, offer subsidies to assist in the formation of vanpools, the formation of carpools, and to encourage the trying of transit services.

Public Agency Coordination: Work closely with various public and quasi-public agencies to improve bus and commuter rail service to the Spectrum and North Irvine Sphere areas.

C. Transportation Management Plan Implementation

As part of the TMP, a process will be established to monitor its effectiveness in reducing peak hour trip generation in the Combined PA ~~30 and~~ 51. Provision shall be made for the Plan to be modified as appropriate to enhance its effectiveness.

- TRAN2 Following adoption of a land use plan and circulation plan for the Great Park property and before the issuance of any building permits within the base property, the City of Irvine shall request a cooperative study with OCTA and other affected jurisdictions to amend the Orange County Master Plan of Arterial Highways (MPAH). Marine Way, Trabuco Road from the SR-133 toll way to "O" Street (formerly College Road), and Ridge Valley (formerly "Y" Street) should be included on the MPAH.
- TRAN3 Prior to issuance of the first building permit for dwelling units or non-residential square footage, a Fee Reallocation Study shall be completed to recalculate the NITM Fees reflecting any fair share allocation modifications. The landowner or subsequent property owner shall submit the Fee Reallocation Study under a separate cover to be approved by the Director of Public Works, in consultation with the NITM Advisory Committee.
- TRAN4 Prior to approval of the last final map for the 2011 Approved Project (or any portion thereof in the event that the final map is approved in multiple phases), the landowner or subsequent property owner shall pay its fair share of the costs of the following mitigation in an amount to be mutually agreed upon between the landowner or subsequent property owner and the City and reflective of the costs of the mitigation at the time of payment:
- 286 Jeffrey Road & Roosevelt: Restripe the existing eastbound approach to provide a shared through/ right turn lane within the existing right-of-way.
 - 361 Bake Parkway & Portola Parkway: Restripe the existing northbound approach to provide a shared through/left lane (which currently exists as a through lane) within the existing right-of-way and modify the existing traffic signal operation for a north/south split phase signal operation. Alternatively, restripe the existing northbound approach to provide dual left turn lanes in combination with a single through lane and single right turn lane within the existing right-of-way, and modify signal operation to include northbound right turn overlap phase.

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- 374 Lake Forest & Portola Parkway (Pending Projects analysis impact): Convert the existing northbound approach from de-facto right-turn to a dedicated right-turn, and modify the existing traffic signal operation to include right turn overlap phase.

5.12.7 Level of Significance Before Additional Mitigation

The preceding analysis sets forth the locations that would have significant traffic impacts without mitigation in the 2012 Modified Project scenario for the Year 2015, Year 2030 and/or Post-2030.

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: Impact 5.12-2.

Without mitigation, like the 2011 Approved Project, the following impacts would be **significant**:

- **Impact 5.12-1** Project generated traffic would result in significant impacts at a number of intersections in the Year 2015, Year 2030 and Post-2030 conditions.

5.12.8 Additional Mitigation Measures for the 2012 Modified Project

TRAN5 **(For specific Project-related non-NITM improvements):** In conjunction with the submittal of any tentative tract maps/tentative parcel maps for the Project within Combined PA 51, the landowner or subsequent project applicant shall prepare, subject to review and approval of the City, the required tentative tract map/tentative parcel map (TTM/TPM) level traffic study per City Resolution No. 03-61. This traffic study will verify whether the intersection locations listed below, which have been identified as impacted in this SSEIR, are projected to be impacted by the subject project of the Interim Year Analysis. For those intersections impacted by subject project of the TTM/TPM traffic study, the tentative tract map/tentative parcel map will be conditioned to construct the necessary improvements that have been identified in the TTM/TPM traffic study. For those intersections listed below, which are not projected to be impacted by the subject project of the TTM/TPM traffic study, and prior to approval of the last final map for the 2012 Modified Project (or any portion thereof in the event that the final map is approved in multiple phases), the land owner or subsequent property owner shall construct, pay fair share of the costs or enter into an agreement with the City to establish the mechanism in which the funds generated by the mitigations shall be provided and utilized by Caltrans, City of Lake Forest, City of Tustin and/or City of Irvine toward implementing the improvements.

- 16. Newport & Irvine – Modification of signal to provide a northbound right turn overlap phase. (2030, Option 2) Improvement no longer needed if Pending projects are approved.
- 54. Browning & Irvine – Application of ATMS, subject to approval by City of Tustin. (2030, Options 1 & 2)
- 221. Culver & Bryan – Addition of a westbound defacto right turn lane. (2030, Option 2) Improvement no longer needed if Pending projects are approved.
- 286. Jeffrey & Roosevelt – Conversion of the eastbound shared through/right lane into a through lane and addition of a second right turn lane. (Post-2030, Options 1 & 2)

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- 290. Jeffrey & Barranca – Application of PA9C-identified ATMS. (2030. Options 1 & 2)
- 291. Jeffrey & Alton – Provision of an eastbound standard right-turn lane with right-turn overlap resulting in an ultimate eastbound lane configuration of 2 left-turn lanes, 2 through lanes, and 1 right-turn lane. (Post-2030, Options 1 & 2)
- 303. Sand Canyon & I-5 NB ramp/Marine Way – Conversion of the northbound defacto right turn lane to a standard right turn lane with right turn overlap signal operation. (2030, Options 1 & 2)
- 306. Sand Canyon & Oak Canyon - Fair Share contribution towards – conversion of the westbound shared through/right lane to a single through lane and conversion of the westbound right-turn lane into a free-right turn lane, as identified in the PA40/12 GPA/ZC. (2030, Options 1 & 2) Improvement no longer needed if Pending projects are approved.
- 321. Laguna Canyon & Old Laguna Canyon – Application of ATMS, subject to approval by the Director of Public Works. Alternate improvement is the addition of a fourth northbound through lane. (Post-2030, Options 1 & 2) Improvement no longer needed if Pending projects are approved.
- 366. Bake & Rockfield – Fully funded LFTM improvement: Conversion of a westbound through lane to a third left turn lane. (2030, Options 1 & 2)

TRAN6 **(For specific Project-related NITM improvements):** The NITM Program provides a funding mechanism for the coordinated and phased installation of required traffic and transportation improvements established in connection with land use entitlements for City of Irvine Planning Areas 1, 5, 6, 8, 9, 40 and 51. As established by City Ordinance No. 03-20, Combined PA 51 is included in this program and, as such, is required to pay its fair share towards the List of NITM Improvements included within the established NITM Program. The following Project impacted locations are included in the NITM List of Improvements and thus, payment of NITM fees will mitigate the Combined PA 51 project's fair share responsibility towards these improvements:

- 228. Culver & Barranca – Conversion of the westbound defacto right-turn lane to a through lane. (2030, Options 1 & 2)
- 424. Los Alisos & Rockfield – Addition of a southbound right turn lane. (2030, Option 1) Improvement no longer needed if Pending projects are approved.
- I-5 Northbound Off-ramp to Jamboree – Addition of a second drop lane from the I-5 to the Jamboree off-ramp. (2030, Option 1)

TRAN7 **(If pending projects are approved, Project-related non-NITM improvements):** In the event that all of the pending (not approved) projects analyzed are approved and in conjunction with the submittal of any tentative tract maps/tentative parcel maps for the Project within Combined PA 51, the landowner or subsequent project applicant shall prepare, subject to review and approval of the City, the required tentative tract map/tentative parcel

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map (TTM/TPM) level traffic study per City Resolution No. 03-61. This traffic study will verify whether the intersection locations listed below, which have been identified as impacted in this SSEIR, are projected to be impacted by the subject project of the Interim Year Analysis. For those intersections impacted by subject project of the TTM/TPM traffic study, the tentative tract map/tentative parcel map will be conditioned to construct the necessary improvements that have been identified in the TTM/TPM traffic study. For those intersections listed below, which are not projected to be impacted by the subject project of the TTM/TPM traffic study, and prior to approval of the last final map for the 2012 Modified Project (or any portion thereof in the event that the final map is approved in multiple phases), the land owner or subsequent property owner shall construct, pay fair share of the costs or enter into an agreement with the City to establish the mechanism in which the funds generated by the mitigations shall be provided and utilized by Caltrans, City of Lake Forest, City of Tustin and/or City of Irvine toward implementing the improvements.

- 54. Browning & Irvine – Application of ATMS, subject to approval by City of Tustin. (2030, Options 1 & 2)
- 286. Jeffrey & Roosevelt – Conversion of the eastbound shared through/right lane into a through lane and addition of a second right turn lane. (Post-2030, Options 1 & 2)
- 290. Jeffrey & Barranca – Application of PA9C-identified ATMS.
- 291. Jeffrey & Alton – Provision of an eastbound standard right-turn lane with right-turn overlap resulting in an ultimate eastbound lane configuration of 2 left-turn lanes, 2 through lanes, and 1 right-turn lane. (2030 & Post-2030, Options 1, Post-2030, Option 2)
- 303. Sand Canyon & I-5 NB ramp/Marine Way – Conversion of the northbound defacto right turn lane to a standard right turn lane with right turn overlap signal operation. (2030, Options 1 & 2)
- 366. Bake & Rockfield – Fully funded LFTM improvement: Conversion of a westbound through lane to a third left turn lane. (2030, Options 1 & 2)
- 417. El Toro & Portola – Fully funded LFTM improvement: Addition of a southbound right turn overlap phase. (2030, Options 1 & 2)

TRAN8 **(If pending projects are approved, For specific Project-related NITM improvements):** The NITM Program provides a funding mechanism for the coordinated and phased installation of required traffic and transportation improvements established in connection with land use entitlements for City of Irvine Planning Areas 1, 5, 6, 8, 9, 40 and 51. As established by City Ordinance No. 03-20, Combined PA 51 is included in this program and, as such, is required to pay its fair share towards the List of NITM Improvements included within the established NITM Program. In the event that all of the pending (not approved) projects analyzed are approved, the following Project impacted locations are included in the NITM List of Improvements and thus, payment of NITM fees will mitigate the Combined PA 51 project's fair share responsibility towards these improvements:

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- 228. Culver & Barranca – Conversion of the westbound defacto right-turn lane to a through lane. (2030, Options 1 & 2)
- I-5 NB Off-ramp to Jamboree – Addition of a second drop lane from the I-5 to the Jamboree off-ramp. (2030 & Post-2030, Option 1 & 2)

TRAN9 **(Caltrans Fair Share):** Prior to approval of the last final map for the 2012 Modified Project (or any portion thereof in the event that the final map is approved in multiple phases), the land owner or subsequent property owner shall make a good-faith effort to enter into a fair share agreement with Caltrans and the City of Irvine to establish its fair share allocation towards the future implementation of the following freeway facility improvements. It may not be possible to successfully negotiate the agreement with Caltrans. Fair share contribution shall be calculated using the same methodology for determining fair share contributions as included in the North Irvine Transportation Mitigation Program. The Agreement shall establish the mechanism in which the funds generated by the Project's fair share mitigations shall be provided and utilized by Caltrans and/or City of Irvine toward implementing the following improvements:

- I-5 Northbound, north of Culver – Directional capacity enhancement equivalent to a single general purpose lane. (2030, Options 1 & 2)
- I-5 Northbound, north of Jeffrey – Directional capacity enhancement equivalent to a single general purpose lane. (2030, Options 1 & 2) Improvement no longer needed if Pending projects are approved.
- I-405 Northbound, north of Jeffrey – Directional capacity enhancement equivalent to a single general purpose lane. (2030 and Post-2030, Options 1 & 2) Improvement no longer needed if Pending projects are approved.

TRAN10 **(If pending projects are approved, Caltrans Fair Share):** In the event that all of the pending (not approved) projects analyzed are approved, and prior to approval of the last final map for the 2012 Modified Project (or any portion thereof in the event that the final map is approved in multiple phases), the land owner or subsequent property owner shall make a good-faith effort to enter into a fair share agreement with Caltrans and the City of Irvine to establish its fair share allocation towards the future implementation of the following freeway facility improvements. It may not be possible to successfully negotiate the agreement with Caltrans. Fair share contribution shall be calculated using the same methodology for determining fair share contributions as included in the North Irvine Transportation Mitigation Program. The Agreement shall establish the mechanism in which the funds generated by the Project's fair share mitigations shall be provided and utilized by Caltrans and/or City of Irvine toward implementing the following improvements:

- SR-133 northbound loop on-ramp at Barranca Parkway – Conversion of the HOV preferential lane to a second metered mixed-flow lane (2015, Option 2)
- I-5 Northbound, north of Culver – Directional capacity enhancement equivalent to a single general purpose lane. (2030, Options 1 & 2)

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- TRAN11 **(Rockfield MPAH Amendment)** The City of Irvine shall submit a request to OCTA and other affected jurisdictions to amend the Orange County Master Plan of Arterial Highways (MPAH) to eliminate the extension of Rockfield Boulevard from the eastern project boundary to Marine Way.
- TRAN12 **(If Rockfield MPAH Amendment not approved by OCTA)** In the event that the Rockfield MPAH change does not occur and the Rockfield connection to Marine Way is ultimately constructed, and in addition to previously identified Post-2030 Option 1 improvements, the land owner or subsequent property owner shall enter into a fair share agreement with the City of Irvine and shall make a good-faith effort to enter into a fair share agreement with Caltrans to establish its fair share allocation towards the future implementation of the conversion of the HOV preferential lane at the SR-133 northbound loop on-ramp at Barranca Parkway to a second metered mixed-flow lane. It may not be possible to successfully negotiate the agreement with Caltrans. The fair share contribution shall be calculated using the same methodology for determining fair share contributions as included in the North Irvine Transportation Mitigation Program. The Agreement shall establish the mechanism in which the funds generated by the Project's fair share mitigations shall be provided and utilized by Caltrans and/or City of Irvine. For Option 2, the mitigations as indicated in TRAN5 through TRAN10 remain unchanged in the event that the Rockfield MPAH change does not occur and the Rockfield connection to Marine Way is ultimately constructed.

5.12.9 Level of Significance After Mitigation

The 2011 Certified EIR concluded that with the 2011 Approved Project all intersections and roadway/freeway/tollway/ramp segments would operate at acceptable levels of service with the existing or planned improvements. However, the traffic analysis assumed that the cumulative impact of project traffic along with other regional growth at the identified ramp and freeway locations will be mitigated through a combination of regional programs that are the responsibility of other agencies. Therefore, the 2011 Certified EIR concluded that cumulative freeway/tollway ramp impacts would remain significant and unavoidable if these programs are not implemented by the agencies with the responsibility to do so.

Traffic impacts of the 2012 Modified Project have been identified by analyzing the study area circulation system based on existing traffic conditions and 2015, 2030 and Post-2030 future traffic conditions. In some cases, new project impacts that were not mitigated by improvements identified in the North Irvine Transportation Mitigation (NITM) Program have been identified for project development scenarios. Recommended mitigation measures for each impacted location are presented above. If there are intersections where identified improvements may not be feasible due to cost, right-of-way concerns, or community opposition, traffic impacts could remain significant and unavoidable.

Cities of Lake Forest, Laguna Woods, Mission Viejo and County of Orange Intersections and Arterial Segments

Inasmuch as the primary responsibility for approving and/or completing certain improvements located outside of Irvine lies with agencies other than the City (i.e., City of Lake Forest, Laguna Woods, Mission Viejo, Orange County, and Caltrans), there is the potential that significant impacts may not be fully mitigated if such improvements are not completed for reasons beyond the City's control (i.e., the City cannot undertake or require improvements outside of Irvine's jurisdiction). Should that occur, impacts relating to traffic generated by the project would remain significant.

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TRANSPORTATION AND TRAFFIC

The City adopted the NITM Program to establish a funding mechanism for the transportation improvement mitigation measures identified in the EIRs for three future development projects in north Irvine; 1) Spectrum 8/PA40, 2) Irvine Northern Sphere Area (PAs 5B, 6, 8A and 9), and 3) the Orange County Great Park. This program will contribute to the improvement of facilities within Irvine and a fair-share to improvements outside Irvine. The City acknowledges the fair-share cost of improvements to those facilities; however, the adjacent Cities have full control over implementing the identified improvements under their jurisdiction. If improvements are not completed for reasons beyond the City's control, the 2012 Modified Project's traffic impacts would remain significant.

Caltrans Main-Line Segments and Ramps

State highway facilities within the study area are not within the jurisdiction of the City. Rather, those improvements are planned, funded, and constructed by the State of California. OCTA's Renewed Measure M provides a potential funding source and identifies general improvements on the I-5 Freeway within the study area and were analyzed at their recommended buildout in the traffic study for the 2012 Modified Project.

The City adopted the NITM Program to establish a funding mechanism for the transportation improvement mitigation measures identified in the Environmental Impact Reports (EIRs) for three future development projects in north Irvine; 1) Spectrum 8/PA40, 2) Irvine Northern Sphere Area (PAs 5B, 6, 8A and 9), and 3) the Orange County Great Park. This program is specifically in place to contribute to the improvement of facilities within Irvine and a fair-share to improvements outside Irvine. The City acknowledges the fair-share cost of improvements to Caltrans facilities; however, Caltrans has full jurisdiction toward implementing the identified improvements under its jurisdiction.

While potential impacts to the freeway mainline segments and ramps have been evaluated, implementation of the transportation improvements to Caltrans facilities listed above is the primary responsibility of Caltrans. While Caltrans has recognized that private development has a role to play in funding fair share improvements to impacts on the I-5, I-405, SR-133, and SR-241, Caltrans has not adopted a program that can ensure that locally-contributed impact fees will be tied to improvements to freeway mainlines and only Caltrans has jurisdiction over mainline improvements. Because Caltrans has exclusive control over state highway improvements, ensuring that developer fair share contributions to mainline improvements are actually part of a program tied to implementation of mitigation is within the jurisdiction of Caltrans. However, a number of funding programs are in place in Orange County to assist in improving and upgrading the regional transportation system. If these programs are not implemented by the agencies with the responsibility to do so, the project's freeway/tollway ramp and mainline impacts would remain significant and unmitigated.

Consequently, like the 2011 Approved Project, Impact 5.12-1 are considered **significant and unavoidable**.

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TRANSPORTATION AND TRAFFIC

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5.11 RECREATION

This section of the DSSEIR evaluates the potential impacts of the 2012 Modified Project on existing recreational amenities and/or facilities in Irvine, as compared to the 2011 Approved Project.

5.11.1 Environmental Setting

Regulatory Setting

City of Irvine Park Standards

For new residential developments, the City requires a dedication of five acres of parkland (three acres of neighborhood and two of community parkland) for every 1,000 residents. However, the adoption of the Amended and Restated Development Agreement (ARDA) (Ordinance No. 09-09) specified that the community park dedication requirement for residential developments in the Proposed Project Site was satisfied through the dedication of land and money for the Great Park. Under the ARDA, the modified neighborhood parkland dedication requirements noted below apply to residential developments within the Proposed Project Site:

- For market-rate residential development, 3 acres of neighborhood parkland for every 1,000 residents
- For affordable-rate residential development, 2 acres of neighborhood parkland for every 1,000 residents.

The population estimates for calculating parkland is based on population generation factors adopted by the City in the Municipal Code Subdivision Ordinance (Park Code, Section 5-5-1004 [c],) which implements the State Quimby Act (California Government Code Section 66477). The actual parkland dedication requirement for the Proposed Project Site, assuming approval of the 2012 Modified Project, will be calculated based on the ARDA.

Additionally, the City's Subdivision Ordinance (Municipal Code Section 5-5-1004) and the adopted Park/Public Facilities Standards Manual (Resolution No. 09-141) establish park and public facilities development standards that govern the acceptance of parkland, collection of park fees, provision of improvements, and development/construction standards and criteria for design of public and private parks. Specific park locations, sizes, and improvement requirements are generally determined in conjunction with the tentative tract map application processes.

The City designates parks under the following classifications, as described in Section 5-5-1004 of the City's Municipal Code.

- Community Parks. Parks that serve a minimum population of 10,000 and are generally a minimum of 20 acres. These parks are designed to serve more than one Planning Area.
- Public Neighborhood Parks. Parks that serve a minimum population of 2,500 and are a minimum of 4 acres.

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- Private Neighborhood Parks. Parks that serve the immediate subdivision/development or specific planned community in which they are located, and are a minimum of one-third acre.

Local and Regional Trails

Irvine has landscaped public recreational trails, extensive open space areas, regional parks and open space. The Lower Peters Canyon/San Diego Creek Trail (Class I Off-Street Trail and Riding and Hiking) is located in and near Irvine. Also located a short distance south of Irvine are a variety of other recreational opportunities, such as Upper Newport Bay Ecological Reserve and Regional Park, Laguna Wilderness Park, Crystal Cove State Park, and the Pacific Ocean beaches in Newport Beach, Laguna Beach, and Huntington Beach. In addition, there are several regional parks operated by the County of Orange in or near Irvine. William R. Mason Regional Park is in Irvine. Irvine and Peters Canyon Regional Parks and Limestone-Whiting Wilderness Park are within short travel time. Additionally, there are numerous biking and riding/hiking trails throughout Irvine that make up the Irvine trail system, which is depicted in General Plan Figure B-4, Trails Network. Irvine also has extensive areas of planned and existing open space that offer recreational opportunities such as hiking and mountain biking.

Current Inventory of Parks and Recreation Facilities

Parks in Irvine

Irvine – Public Community Parks

Irvine presently has 18 community parks (listed in Table 5.11-1 below), 37 public neighborhood parks, 200 private neighborhood parks, and other public and private recreational facilities. There are no existing or proposed community parks within the Proposed Project Site. Heritage Fields has met its requirement for dedication of community parkland via past dedication of 165 acres of parkland and payment of fees to the City as set forth in the ARDA. Absent the ARDA, the 2011 Approved Project would require a total of 24.81 acres of community parkland.

*Table 5.11-1
Public Community Park Amenities and Facilities in Irvine*

<i>Name</i>	<i>Location</i>	<i>Distance from OCGP Boundary (miles)</i>	<i>Size (acres)</i>	<i>Amenities/Facilities</i>
Alton Athletic Park	308 W. Yale Loop	3.2	9.8 acres	1 restroom, 2 drinking fountains, 2 lighted soccer fields, 3 lighted ball diamonds, bicycle trail access, 2 batting cages, electrical outlets
Bommer Canyon	11 Bommer Canyon Road	4.3	15 acres	2 restrooms, 1 drinking fountain, 1 open play area, 1 amphitheater, 1 volleyball court, 1 barbeque, group picnic area, 25 picnic tables, electrical outlets, bicycle trail access

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*Table 5.11-1
Public Community Park Amenities and Facilities in Irvine*

<i>Name</i>	<i>Location</i>	<i>Distance from OCGP Boundary (miles)</i>	<i>Size (acres)</i>	<i>Amenities/Facilities</i>
Colonel Bill Barber Marine Corps Memorial Park	4 Civic Center Plaza, corner of Barranca Parkway and Harvard	4	48 acres	Deanna Manning Stadium, 4 lighted softball diamonds, 3 lighted soccer overlay fields, 4 batting cages, 6 lighted tennis courts, 2 child play areas, 1 open play area, 1 amphitheater, 2 concession stands, bicycle trail access, 4 barbecues, 6 group picnic areas, 5 restrooms, 17 drinking fountains, electrical outlets, 24 picnic areas
Deerfield Community Park	55 Deerwood West, between Culver and Yale along Irvine Center Drive	2.5	10.1 acres	1 multi-use building, 1 restroom, 5 drinking fountains, 2 child play areas, 1 open play area, 4 lighted tennis courts, 2 lighted volleyball Courts, 2 racquetball courts, 1 disc golf course, 1 fitness par course , 4 barbecues, 1 outdoor sink, 1 group picnic area, 11 picnic tables, electrical outlets
Harvard Athletic Park	14701 Harvard Ave, between Irvine Center Drive and Walnut	3.3	26.9 acres	1 multiuse building, 2 restrooms, 8 drinking fountains, 1 concession stand, 4 lighted soccer fields, 7 lighted ball diamonds, bicycle trail access, 4 batting cages, 5 barbecues, 1 group picnic area, 10 picnic tables, electrical outlets
Heritage Park	14301 Yale Ave., on the corner of Walnut and Yale	2	36.5 acres	3 pools, 2 multiuse buildings, 4 restrooms, 11 drinking fountains, 2 child play areas, 1 open play area, 1 amphitheater, lake/pond,, 3 lighted soccer fields, 12 lighted tennis courts, 3 basketball courts, 1 volleyball court, 2 lighted racquetball courts, 3 ball diamonds (2 lighted), 22 barbecues, 1 group picnic area, 29 picnic tables electrical outlets
Hicks Canyon Park	3864 Viewpark	2.5	16.7 acres	1 restroom, 3 drinking fountains, child play area, 1 open play area, 1 concession stand, 2 lighted soccer fields, 2 lighted ball diamonds, bicycle trail access, 4 barbecues, 2 group picnic areas, 6 picnic tables, electrical outlets
Las Lomas Community Park	10 Federation Way, the corner of Turtle Ridge and Federation Way	5.2	18.3 acres	1 multiuse building, 1 restroom, 6 drinking fountains, 2 child play areas, open play area, 1 concession stand, 2 lighted soccer fields, 2 lighted tennis courts, 2 lighted ball fields, 2 basketball courts, 1 lighted racquetball/handball court, 2 group picnic areas, 7 barbecues, 14 picnic tables
Lower Peters Canyon Community Park	3901 Farwell	2.8	10.3 acres	1 restroom, 1 drinking fountain, 1 child play area, 1 lighted soccer field, 8 lighted tennis courts, 2 barbecues, 8 picnic tables
Northwood Community Park	4531 Bryan, at the corner of Yale and Bryan	2	17.7 acres	1 multiuse building, 3 restrooms, 4 drinking fountains, 1 child play area, 1 open play area, 1 amphitheater, 2 soccer fields, 2 lighted tennis courts, 2 basketball courts, 2 racquetball courts, 2 ball diamonds (1 lighted) , 4 barbecues, 2 group picnic areas, 14 picnic tables, electrical outlets, 1 fitness par course, shuffle board court, ½ mile track

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*Table 5.11-1
Public Community Park Amenities and Facilities in Irvine*

<i>Name</i>	<i>Location</i>	<i>Distance from OCGP Boundary (miles)</i>	<i>Size (acres)</i>	<i>Amenities/Facilities</i>
Oak Creek Community Park	15616 Valley Oak	1	11.7 acres	1 restroom, 2 drinking fountains, 2 child play areas, 2 lighted soccer fields, 1 ball diamond, 1 group picnic area, 8 barbeques, 8 picnic tables, electrical outlets
Quail Hill Community Park	35 Shady Canyon Drive	2.3	16.0 acres	1 restroom, 4 drinking fountains, 2 lighted basketball courts, 2 lighted baseball fields, 3 soccer fields, 2 barbeques, 2 picnic tables, electrical outlets, bicycle trail access
Rancho Senior Center	3 Ethel Coplen Way, at Ethel Coplen Way between Michelson and University along Culver Drive	4.4	2.1 acres	1 multiuse building, 1 restroom, 1 drinking fountain, 1 barbecue, electrical outlets
Turtle Rock Community Park	1 Sunnyhill At the corner of Sunnyhill and Turtle Rock Drive	3.9	25.1 acres	1 multiuse building, 2 restrooms, 5 drinking fountains, 3 child play areas, 1 open play area, 1 amphitheater, 4 lighted tennis courts, 1 lighted volleyball court, 1 ball diamond, 12 barbecues, 1 group picnic area, 28 picnic tables, electrical outlets, bicycle trail access
University Community Park	1 Beech Tree Lane On Beech Tree Lane along University Drive	3.7	16.3 acres	1 multiuse building, 1 restroom, 3 drinking fountains, 2 child play areas, 1 open play area, 3 lighted soccer fields, 4 lighted tennis courts, 1 basketball court, 2 lighted volleyball courts, 1 disc golf course, 3 lighted racquetball courts, 3 group picnic areas, 2 barbeques, 12 picnic tables, electrical outlet
Windrow Community Park	285 E Yale Loop At the corner of E Yale Loop and Barranca Parkway	1.9	18.9 acres	Ryan Lemmon Stadium, 2 lighted ball fields, 1 lighted soccer field, 1 lighted basketball court (half-court), 4 batting cages, 1 concession stand, 4 picnic tables, 1 restroom, 3 drinking fountains, electrical outlets, bicycle trail access
Woodbridge Community Park, Lakeview Senior Center, and Adult Day Health Center	20 Lake Road	2.7	22 acres	2 lighted basketball courts, 1 volleyball, 1 multi-use building, 4 racquetball courts, 3 restrooms, 2 drinking fountains, 1 amphitheater/stage, 2 barbeques, and 4 picnic tables, 1 group picnic area, electrical outlets, bicycle trail access
Woodbury Community Park	130 Sanctuary	0.8	10.7	1 soccer field (unlighted), 2 basketball courts, 2 ball diamonds (unlighted), 4 barbeques, 3 group picnic areas, 11 picnic tables, 1 multi-use building, 1 restroom, 2 drinking fountains, 2 child play area, 1 open play area, bicycle trail access

Source: City of Irvine 2011

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Irvine – Public Neighborhood Parks

Currently, there are no public neighborhood parks within the Proposed Project Site. However, Table 5.11-2 below lists all of the City's public neighborhood parks that are within two miles of the boundaries of the Proposed Project Site.

*Table 5.11-2
Public Neighborhood Park Amenities and Facilities in Irvine
Within Two Miles of the Proposed Project Site*

<i>Name</i>	<i>Location</i>	<i>Distance from Proposed Project Site (miles)</i>	<i>Size (acres)</i>	<i>Amenities/Facilities</i>
Blue Gum	14 Aberdeen	1.5	2.7	1 volleyball court, 3 barbeques, 2 picnic tables, 1 drinking fountain, 1 child play area, 1 open play area, 1 restroom
Carrotwood	60 Bennington	1.6	3.1	1 soccer field, 1 basketball court, 1 volleyball court, 1 drinking fountain, 1 child play area, 1 open play area, 1 barbeque, 1 group picnic area
Citrus Glen	12170 Citrusglen	1.9	3.1	4 tennis courts, 2 barbeques, 4 picnic tables, 1 restroom, 1 drinking fountain, 1 child play area, and 1 open play area, 1 group picnic area, bicycle trail access
Hoepfner	5331 Hoepfner	1.6	2.2	2 tennis courts, 2 drinking fountains, 1 child play area, and 1 open play area, bicycle trail access
Knollcrest	2065 Knollcrest	1.9	3.0	2 child play areas, 1 drinking fountain, 1 restroom, 2 lighted tennis courts, 2 barbecues, 1 group picnic area with 4 picnic tables
Orchard	1 Van Buren	2.0	6.0	1 soccer field, 2 basketball courts, 1 ball diamond, 3 barbeques, 8 picnic tables, 1 group picnic area, 1 restroom, 1 drinking fountain, 2 child play areas, and 1 open play area.
Pepperwood	55 Columbus	1.9	3.1	4 barbeques, 1 drinking fountain, 1 child play area, and 1 open play area.
Ranch	5161 Royale	1.6	8.7	2 barbecues, 1 group picnic area, 1 child play area, and 1 open play area.
Sycamore	27 Lewis	1.6	6.9	3 barbecues, 2 group picnic areas, 7 picnic tables, 1 drinking fountain, 1 child play area, and 1 open play area.
Valley Oak	16001 Valley Oak	1.4	5.0	1 child play area, 1 drinking fountain, 1 open play area, 1 restroom, 1 basketball court, 2 lighted tennis courts, 1 group picnic area with 8 picnic tables

Source: City of Irvine 2012.

Irvine – Private Neighborhood Parks

There are currently no private neighborhood parks within the Proposed Project Site. Table 5.11-3 lists the location of all of the private neighborhood parks within two miles of the Proposed Project Site boundary.

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*Table 5.11-3
Existing Private Neighborhood Parks
within Two Miles of the Proposed Project Site*

PA 6
31 Sacred Path
95 Ranchland
56 Ridge Valley
63 White Sage
100 Pathway
91 Scarlet Bloom
53 White Sage
PA 8
40 Early Light
PA 9
38 Sanctuary
53 Winding Way
52 Mapleton
42 Rolling Green
31 Hedge Bloom
223 Vintage
321 Crested Bird
355 Azurite
50 Splendor
30 Crosspointe
148 Sanctuary
40 Iceberg Rose
65 Lamplighter
108 Lamplighter
42 Enchanted
45 Talisman
61 Great Lawn
180 Great Lawn
135 Rembrandt
330 Corinthian
90 Calypso
PA 33
18000 Spectrum

Regional Parks Outside Irvine and Within Two Miles of the Proposed Project Site

Limestone Canyon and Whiting Ranch Regional Parks are located north and across SR-241 (the Foothill Transportation Corridor) from the Proposed Project Site. The two parks combined contain approximately 4,300 acres of riparian and oak woodland canyons, grassland hills, and slopes of coastal sage scrub and chaparral. Amenities include hiking, bicycling, and equestrian trails, portable restrooms, and a visitor center (OC Parks 2012).

Laguna Coast Wilderness Park, located 1.6 miles southwest of the Proposed Project Site, spans 7,000 acres of coastal sage scrub and oak and sycamore woodlands. Amenities include hiking, bicycling, and equestrian trails, restrooms, an interpretive center, and a botanical preserve (OC Parks 2012).

5.11.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally be considered to have a significant effect on the environment if the project:

- R-1 Would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- R-2 Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.11.3 The 2011 Approved Project

Per the adopted ARDA, the 2011 Approved Project has fulfilled its community parkland dedication requirements through the transfer of land to establish the Great Park, which will provide a large regional open space amenity for the benefit of the entire Orange County region. In addition, consistent with the ARDA, residential development on the Approved Project Site will be required to fulfill its neighborhood park requirements on-site.

The calculation for required neighborhood parkland per the ARDA was revised for the 2011 Approved Project in the 2011 SEIR. The 2011 SEIR concluded that the 2011 Approved Project would require 35.97 acres of neighborhood parkland. The demand for neighborhood parkland under the 2011 Approved Project is detailed in Table 5.11-4 below.

No significant impacts to existing recreation facilities were identified in the 2011 Certified EIR.

Impacts of development and long-term operation of these open space and recreation uses, as well as mitigation measures for such impacts, were analyzed in topical sections of the 2011 Certified EIR. No significant impacts due to park development, and no mitigation measures, were specifically identified in the 2011 Certified EIR or the associated MMRP.

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Table 5.11-4

Neighborhood Parkland Demand Generated by the 2011 Approved Project

District	Residential Unit Types	Density Category	Number of Units	Estimated Persons per Household	Total Persons	Required Parkland, Acres	
						Per 1,000 Residents	Total
1 North	Single-Family Detached	Low (0-5)	203	2.94	597	3	1.79
	Single-Family Detached	Medium (0-10)	608	2.57	1,563	3	4.69
	Single-Family Attached	Medium-High (0-25)	442	2.29	1,012	3	3.04
	Apartments-Family (Affordable)	Medium-High (0-25)	196	2.29	449	2	0.90
	Apartments-Senior (Affordable)	Medium-High (0-25)	182	2.29	417	2	0.83
	Apartments (Affordable)	Medium-High (0-25)	166	2.29	380	2	0.76
1 South	Single-Family Detached	Medium (0-10)	154	2.57	396	3	1.19
	Single-Family Attached	Medium (0-10)	96	2.29	220	3	0.66
	Single-Family Attached	Medium-High (0-25)	179	2.29	410	3	1.23
4	Single-Family Detached	Low (0-5)	137	2.94	403	3	1.21
	Single-Family Detached	Medium (0-10)	541	2.57	1,390	3	4.17
	Single-Family Attached	Medium-High (0-25)	424	2.29	971	3	2.91
7	Single-Family Detached	Low (0-5)	255	2.94	750	3	2.25
	Single-Family Detached	Medium (0-10)	585	2.57	1,503	3	4.51
8	Single-Family Detached	Low (0-5)	213	2.94	626	3	1.88
	Single-Family Detached	Medium (0-10)	513	2.57	1,318	3	3.95
Total			4,894	Not applicable	12,405	Not applicable	35.97

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5.11.4 Environmental Impacts of the 2012 Modified Project

The following impact analysis addresses impacts that the Initial Study disclosed were potentially significant impacts of the 2012 Modified Project concerning park and recreation facilities. The applicable potential impacts are identified in brackets after the impact statement.

IMPACT 5.11-1: THE 2012 MODIFIED PROJECT WOULD RESULT IN AN INCREASE IN THE NUMBER OF RESIDENTS ON THE PROPOSED PROJECT SITE AS COMPARED TO THE 2011 APPROVED PROJECT, AND THEREFORE WOULD INCREASE THE USE OF EXISTING PARK AND RECREATION FACILITIES. [IMPACT R-1]

Impact Analysis: While the 2011 Approved Project included 4,894 residential units, the 2012 Modified Project would increase that total to 9,500 residential units (or a maximum of 10,700 residential units with the optional conversion). In other words, the 2012 Modified Project would add 4,606 units (including 1,194 density bonus units) and approximately 11,323 additional residents. With the optional conversion, the 2012 Modified Project would add a total of 5,806 units (including 1,505 density bonus units) and approximately 14,274 additional residents. As shown below in Table 5.11-5a, the 2012 Modified Project would create a need for approximately 32.80 acres of additional neighborhood park dedication, as compared to the 2011 Approved Project. As shown in Table 5.11-5b, the 2012 Modified Project with optional conversion would create a need for approximately 41.34 acres of additional neighborhood park dedication, as compared to the 2011 Approved Project.

*Table 5.11-5a
Additional Parkland Demand Generated by 2012 Modified Project*

<i>Residential Unit Types</i>	<i>Number of Units</i>	<i>Estimated Persons per Household</i>	<i>Total Persons</i>	<i>Required Parkland, Acres</i>	
				<i>Per 1,000 Residents</i>	<i>Total</i>
Additional Single-Family	1,194	2.94	3,510	3	10.53
Additional Multiple Family Units (Market Rate)	2,900	2.29	6,641	3	19.92
Additional Multiple Family Units (Affordable)	512	2.29	1,172	2	2.35
Additional Units Total	4,606	N/A	11,324	N/A	32.80

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*Table 5.11-5b
Additional Parkland Demand Generated by 2012 Modified Project
with Optional Conversion*

<i>Residential Unit Types</i>	<i>Number of Units</i>	<i>Estimated Persons per Household</i>	<i>Total Persons</i>	<i>Required Parkland, Acres</i>	
				<i>Per 1,000 Residents</i>	<i>Total</i>
Additional Single-Family	1,505	2.94	4,425	3	13.27
Additional Multiple Family Units (Market Rate)	3,655	2.29	8,370	3	25.11
Additional Multiple Family Units (Affordable)	646	2.29	1,479	2	2.96
Additional Units Total	5,806	N/A	14,274	N/A	41.34

Regarding community parks, as discussed above, the Applicant has satisfied its community park requirements through the past dedication of 165 acres of land and payment of fees to the City as set forth in the ARDA. Absent the ARDA, the 2012 Modified Project would require a total of 47.46 acres of community parkland, or a total of 53.35 acres of community parkland with the optional conversion.

The 2012 Modified Project would be required to provide sufficient neighborhood parkland acreage to meet the demand created by its residential population, and, as stated above, the community park requirements have already been fulfilled. The impacts of the construction of the 2012 Modified Project's neighborhood parkland are analyzed in other sections of this DSSEIR (i.e., Sections 5.3, *Air Quality*, 5.4, *Greenhouse Gas Emissions*, 5.8, *Noise*, and 5.12, *Transportation and Traffic*) as part of the development of the overall 2012 Modified Project.

Interim Parkland Impacts

The 2012 Modified Project would be constructed in phases. The 2012 Modified Project includes construction of required park facilities within each of the districts needed to serve future residents. However, as each of the districts is constructed, there may be short periods of time when the residences are constructed prior to construction of the parks necessary to serve that district. During this time, there may be short-term increases in use of existing park facilities located in the vicinity of the Proposed Project Site, including the facilities listed in Tables 5.11-1 and 5.11-2. However, considering the short-term nature of the impact, the fact that residential development would occur in phases, and the number of existing facilities located in the vicinity of the Proposed Project Site, this impact is not considered significant.

Comparison to 2011 Approved Project

The 2011 Certified EIR concluded that the 2011 Approved Project would not result in a significant impact with respect to physical deterioration of existing parks or recreation facilities. The 2011 Approved Project did not create any significant impacts.

The 3,412 new multi-family residential units proposed by the 2012 Modified Project (or 4,301 new multi-family units with the optional conversion) are in addition to the 3,625 units already included in the 2011

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Approved Project. The 1,194 new residential density bonus units proposed by the 2012 Modified Project (or 1,505 new residential density bonus units with the optional conversion) are in addition to the 1,269 density bonus residential units included in the 2011 Approved Project. Pursuant to the ARDA's requirements, the 2012 Modified Project's additional multi-family residential units would create an additional demand for 22.27 acres of neighborhood parkland (or 28.07 acres of neighborhood parkland with the optional conversion). The additional density bonus units would create an additional demand for 10.53 acres of neighborhood parkland (or 13.27 acres of neighborhood parkland with the optional conversion).

As discussed below under Impact 5.11-2, the 2012 Modified Project would dedicate additional neighborhood parkland acreage in an amount needed to comply with ARDA requirements. The impact on parks resulting from the 2012 Modified Project is considered less than significant.

Mitigation Program and Net Impact

No mitigation measures are recommended in this DSSEIR as the 2012 Modified Project's impacts related to existing parks and recreation facilities are less than significant without mitigation.

IMPACT 5.11-2 THE 2012 MODIFIED PROJECT WOULD INVOLVE DEVELOPMENT AND/OR DEDICATION OF APPROXIMATELY 32.80 ACRES OF ADDITIONAL NEIGHBORHOOD PARKS (OR 41.34 ACRES OF NEIGHBORHOOD PARKS WITH THE OPTIONAL CONVERSION). THE IMPACT OF SUCH DEVELOPMENT IS ANALYZED THROUGHOUT CHAPTER 5 OF THIS DSSEIR [IMPACT R-2].

Impact Analysis: The 2012 Modified Project proposes development of an additional 32.80 acres of neighborhood parkland as compared to the 2011 Approved Project. With the optional conversion, the 2012 Modified Project proposed development of an additional 41.34 acres of neighborhood parkland as compared to the 2011 Approved Project. When added to the neighborhood parkland included in the 2011 Approved Project, implementation of the 2012 Modified Project would result in a total of 68.77 acres of neighborhood parks without the optional conversion and 77.31 acres of neighborhood parks with the optional conversion. The proposed public neighborhood parkland would be offered for dedication pursuant to the adopted ARDA and would also meet dedication requirements set forth in applicable provisions of the City's Local Park Code and Subdivision Ordinance.

The impacts of development of these proposed parks are part of the impacts of the development of the 2012 Modified Project as a whole, which are analyzed throughout the various sections of Chapter 5 of this DSSEIR. For example, activities such as grading and construction would result in impacts that are analyzed in other sections of this DSSEIR including 5.3, *Air Quality*, 5.4, *Greenhouse Gas Emissions*, 5.8, *Noise*, and 5.12, *Transportation and Traffic*. Development of the afore-mentioned neighborhood parkland would not have impacts other than those identified in other sections of this DSSEIR.

Comparison to the 2011 Approved Project

The 2011 Certified EIR contained mitigation measures in several sections of its environmental analysis that would apply to the construction and operation of parks and recreational facilities, and determined that impacts would be less than significant. Those mitigation measures are incorporated into the 2012

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Modified Project. Impacts of construction of the parks necessitated by the 2012 Modified Project are discussed throughout the other various sections of Chapter 5 of this DSSEIR.

Mitigation Program and Net Impact

No mitigation measures are introduced in this Section 5.11 of this DSSEIR, as any impacts related to the development of parks and recreational facilities are already less than significant without mitigation or are addressed in the other sections of Chapter 5 of this DSSEIR.

5.11.5 Cumulative Impacts

According to OCP-2010 (CDR 2012), Irvine is projected to have a population of 291,813 people in 2035. Based on the City's Park Code, buildout of Irvine would generate the need for a total of 1,459 acres of parkland and/or the equivalent in amenities, improvements, or fees.

Irvine's residential population in 2010 was 212,375 residents (U.S. Census, 2010). As such, consistent with the City's Municipal Code, 1,062 acres of parkland are required to meet Irvine's current estimated population. Currently, there are a total of 540.6 acres of public parkland (City of Irvine 2012) and 617.7 acres within private parkland. The remainder of the 1,459 acres projected to be needed in 2035 (435 acres) would be provided through City-required neighborhood park dedication or equivalent amenities or fees made in conjunction with individual future residential project approvals.

In addition to the construction of the 68.77 acres of neighborhood parks located on the Proposed Project Site (or 77.31 acres of neighborhood parks with the optional conversion), construction of the 1,145.3-acre Great Park would also provide parkland for area residents. Completion of the Great Park will occur in phases between now and the City's post-2030 General Plan buildout year. The Great Park would provide park space and amenities for residents of the 2012 Modified Project as well as for residents of other parts of the City and of surrounding communities, and would serve to alleviate the effects of population growth on existing parks and park facilities. Overall parks and open space that would be developed as part of the 2012 Modified Project would contribute toward meeting the need for parkland in Irvine at buildout. Project development would have a favorable impact on supply of parkland in Irvine and the 2012 Modified Project would not contribute to an adverse cumulative impact on parks and recreation facilities.

Cumulative impacts of the construction of parks and park amenities by the 2012 Modified Project are analyzed in other sections of this DSSEIR. No further net incremental cumulative impact is identified in this section.

5.11.6 Applicable Mitigation Measures from the 2011 Certified EIR

No mitigation measures other than compliance with the requirements of the City's Local Park Code and Subdivision Ordinance (Section 5-5-1004 (C)) were identified in the 2011 Certified EIR.

5.11.7 Level of Significance Before Additional Mitigation

Impacts 5.11-1

The 2012 Modified Project would require approximately 32.80 additional acres of parkland (or 41.34 acres of parkland with the optional conversion) on the Proposed Project Site above what was approved in

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the 2011 Approved Project. The 2012 Modified Project would develop amenities on that parkland, like the 2011 Approved Project. The acreage of parkland offered for dedication would comply with the applicable requirements in the ARDA. Thus, development of the 2012 Modified Project is not expected to cause or accelerate deterioration of existing park facilities. Impacts of the 2012 Modified Project on existing parkland and park facilities would be less than significant.

Impact 5.11-2

The 2012 Modified Project would require approximately 32.80 acres of additional parkland (or 41.34 acres of parkland with the optional conversion) in addition to the parkland included in the 2011 Approved Project, the impacts of the construction of which are analyzed throughout the various sections of Chapter 5 of this DSSEIR. No additional significant impacts are identified in this Section.

5.11.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are required because impacts of the 2012 Modified Project are less than significant without additional mitigation.

5.11.9 Level of Significance After Additional Mitigation

Impacts associated with parks and recreational facilities would be less than significant without further mitigation.

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5.10 PUBLIC SERVICES

This section of the DSSEIR addresses the potential impacts of the 2012 Modified Project as compared to the 2011 Approved Project on public services including: fire protection and emergency services, police protection, school services, and library services. The analysis in this section is based in part on the Service Provider Correspondence contained in Appendix H of this DSSEIR. Park services are addressed in Section 5.11, *Recreation*, of this DSSEIR. Public and private utilities and service systems, including water, wastewater, and solid waste services and systems, are addressed in Section 5.13, *Utilities and Service Systems*, of this DSSEIR.

5.10.1 Fire Protection and Emergency Services

5.10.1.1 Environmental Setting

The Orange County Fire Authority (“OCFA”) provides fire protection services to the City, unincorporated Orange County, and 22 other jurisdictions. It maintains mutual aid agreements with all other cities in Orange County and with the State of California. Prior to annexation of the Proposed Project Site, primary fire protection to Existing PAs 30 and 51 was provided by OCFA under contract to the County of Orange on an interim basis. Subsequent to the annexation of the Proposed Project Site into the City of Irvine, OCFA has continued and will continue to provide fire protection service to the Proposed Project Site.

OCFA provides fire suppression, emergency medical, rescue and fire prevention, hazardous materials coordination, and wildland management services. OCFA is one of the largest regional fire service organizations in California. OCFA's goals for the provision of fire services are:

- First-in engines should arrive on-scene to medical aids and/or fires within 7 minutes and 20 seconds 80, percent of the time.
- First-in truck companies should arrive on-scene to fires within 12 minutes, 80 percent of the time.
- First-in paramedic companies should arrive on-scene at all medical aids within 10 minutes, 80 percent of the time (Hernandez 2011).

OCFA has 71 fire stations, which include structural engines (used for fighting structure fires), truck companies, paramedic units, airport crash trucks, hazardous materials response teams, water-dropping helicopters, and other various pieces of specialized equipment. Eleven of these stations are in Irvine. Nearby OCFA fire stations outside of the City limits (i.e. Tustin and Lake Forest) may respond to calls in the City if necessary. OCFA also has in place a Secured Fire Protection Services Agreement with The Irvine Company, as part of the Northern Sphere Area that funds fire protection facilities and apparatus and would help provide adequate service to all areas surrounding the Proposed Project Site.

Resources are deployed based on a regional service delivery system, assigning personnel and equipment to emergency incidents without regard to jurisdictional boundaries. Table 5.10-1 indicates the stations that would provide initial response and the next level of response to calls for emergency services from the Proposed Project Site.

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Table 5.10-1
OCFA Responding Stations

<i>Station Number</i>	<i>Station Location</i>	<i>Equipment and Personnel</i>
Initial Responding Stations to Proposed Project Site		
Fire Station 20	7020 Trabuco Road	1 Paramedic Engine/1 Water Tender/12 Personnel
Fire Station 27	12400 Portola Springs Road	1 Paramedic Engine/9 Personnel
Fire Station 38	26 Parker	1 Engine/1 Medic Van/15 Personnel
Fire Station 51 ¹	18 Cushing Division Chief Headquarters	1 Paramedic Engine/14 Personnel (including Division II Chief and Administrative Captain)
Next Level of Responding Stations to Proposed Project Site		
Fire Station 26	4861 Walnut Avenue	1 Engine/1 Medic Van/1 Patrol/15 Personnel/Reserve Firefighters
Fire Station 55	4955 Portola Parkway	1 Paramedic Assessment Unit (PAU) Engine/9 Personnel
Fire Station 47	47 Fossil Road	1 Paramedic Assessment Unit (PAU) Engine/9 Personnel
Fire Station 22	24001 Paseo de Valencia, City of Laguna Woods	2 Paramedic Engines/1 Truck/1 Battalion /39 Personnel
Fire Station 19	23022 El Toro Road, City of Lake Forest	1 Paramedic Engine/1 Squad/12 personnel/Reserve Firefighters

Source: Service Provider Correspondence (Hernandez 2012) in Appendix H of this DSSEIR) and OCFA 2012

¹ Fire Station 51 is the initial responding station for Existing PA 30.

All portions of the Proposed Project Site are within four minutes (two miles) of an existing fire station (see Service Provider Correspondence [Hernandez 2012] in Appendix H of this DSSEIR).

5.10.1.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- FP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services.

5.10.1.3 The 2011 Approved Project

The 2011 Certified EIR addressed the fire protection and services needs of the 2011 Approved Project. The 2011 Certified EIR concluded that there was the likelihood that additional fire services infrastructure and facilities would be required to support development pursuant to the 2011 Approved Project, but that specific details of the fire facilities needed to serve these uses and specific environmental impact of constructing the new facilities would be determined as specific site plans are prepared and locations determined.

Two mitigation measures, HH-3 and HH-4, have been adopted as part of the Mitigation Monitoring and Reporting Program (MMRP) for the 2011 Approved Project to reduce wildfire hazards related to the 2011 Approved Project; the full text of these measures is provided below in Section 5.10.1.7 of this DSSEIR. These already-adopted mitigation measures apply to both the 2011 Approved Project and the 2012 Modified Project.

5.10.1.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to both the 2011 Approved Project and the 2012 Modified Project, and that will help to reduce and avoid potential impacts related to fire protection and emergency services and facilities:

- PPP 10-1 Every project applicant shall comply with all applicable Orange County Fire Authority codes, ordinances, and standard conditions regarding fire prevention and suppression measures relating to water improvement plans, fire hydrants, automatic fire extinguishing systems, fire access, access gates, combustible construction, water availability, and fire sprinkler systems.
- PPP 10-2 Prior to the approval of the first certificate of occupancy the applicant shall arrange for and have passed an inspection, to be performed by the Police Department and the Orange County Fire Authority, to ensure compliance with the Emergency Access Plan requirements. The inspector shall verify test acceptance and locations of all Knox boxes and key switches as depicted on the approved plan (Standard Condition 4.9).
- PPP 10-3 Prior to the issuance of the first building permit, the applicant shall submit and have approved by the Chief of Police an Emergency Access Plan, which identifies and locates all Knox Boxes, Knox key switches, and Click2Enter radio access control receivers. Said plan shall be incorporated into the plan set approved for building permits (Standard Condition 3.17).
- PPP 10-4 Prior to the issuance of the first building permit, the applicant shall have executed a Secured Fire Protection Agreement with the Orange County Fire Authority (Standard Condition A.15).

Project Design Features

The following project design features (“PDFs”) have been incorporated into the 2012 Modified Project and have been assumed in the following analysis:

- PDF 10-1 The Relocated Wildlife Corridor Feature will be designed and planted in such a manner as to ensure that the planting plan does not create a fire hazard for adjacent development. Maintenance of vegetation within the Relocated Wildlife Corridor Feature is not anticipated, but would be allowed as need for fire control. Final approval of the planting schemes and palettes will require approval from the Orange County Fire Authority.

The following impact analysis addresses impacts that the Initial Study for the 2012 Modified Project disclosed as potentially significant impacts of the 2012 Modified Project, as compared to the 2011 Approved Project. The applicable impacts are identified in brackets after the impact statement.

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IMPACT 5.10-1: THE 2012 MODIFIED PROJECT WOULD INCREASE THE NEED FOR FIRE PROTECTION FACILITIES AND PERSONNEL AS COMPARED TO THE 2011 APPROVED PROJECT, BUT WOULD NOT RESULT IN A SUBSTANTIAL ADVERSE PHYSICAL IMPACT. [IMPACT FP-1]

Impact Analysis: The 2012 Modified Project would be served by the fire stations outlined in Table 5.10-1 of this DSSEIR. As indicated by OCFA, the existing facilities will need to be expanded to accommodate additional equipment and personnel to serve the 2012 Modified Project. Like all development, the 2012 Modified Project will be required to participate in a fair share funding approach in the form of a Secured Fire Protection Services Agreement (see PPP 10-4 above), as addressed in 2011 Certified EIR (see Service Provider Correspondence [Hernandez 2012] in Appendix H of this DSSEIR).

OCFA has recently constructed two additional fire stations in the vicinity of the Proposed Project Site: Fire Stations 47 (47 Fossil) and 55 (4955 Portola Parkway). As shown in Table 5.10-1, *OCFA Responding Stations*, these two fire stations would provide additional fire protection and emergency services to the 2012 Modified Project. Nearby OCFA fire stations outside of the City limits (i.e. Fire Station 22 in Laguna Hills and Fire Station 19 in Lake Forest) may also respond to calls if necessary. OCFA also has in place a Secured Fire Protection Services Agreement with the Irvine Company as part of the Northern Sphere Area that funds fire protection facilities and apparatus and would help provide adequate service to all areas surrounding and within the Proposed Project Site. Therefore, the 2012 Modified Project would not have a significant impact on the provision of fire protections services.

The impacts associated with the operation of public facilities, including fire stations, have been addressed within the various topical sections of this DSSEIR.

Furthermore, during the development review and permitting process, OCFA would review and approve building plans to ensure that adequate facilities within individual buildings and lots are provided to serve the needs of the fire department. As is true for the 2011 Approved Project, all standard conditions and guidelines would be applied to the 2012 Modified Project during the normal review process, including the PPPs outlined above (PPPs 10-1 through 10-4). For example, provision of the Knox boxes and key switches (PPP 10-2) and Click2enter radio access control receivers (PPP 10-3) through pedestrian and vehicle security gates would improve response times within the Proposed Project Site. In addition, a Secured Fire Protection Agreement between OCFA and the Project Applicant will be required prior to issuance of building permits (PPP 10-4). All development within the 2012 Modified Project would also be required to comply with the most current adopted fire codes, building codes, and nationally recognized fire and life safety standards of the City, county and state.

Overall, compliance with the existing PPPs, 2011 Approved Project mitigation measures (see HH-3 and HH-4 duplicated below), and PDF 10-1 would ensure adequate access to and within the Proposed Project Site, which further ensures the adequate provision of fire protection and emergency services to residents and businesses in the Proposed Project Site. Therefore, implementation of the 2012 Modified Project would not have a significant impact on fire protection and emergency services, as compared to the 2011 Approved Project.

5.10.1.5 Cumulative Impacts

The geographic area for cumulative analysis of fire protection services is the service area for OCFA. Regionally, OCFA delivers fire, emergency medical, and rescue services from 71 fire stations. As

cumulative development occurs within its service area, OCFA works with developers and jurisdictional planning departments on development projects impacting fire protection services, so that adequate response times are maintained at a local level. In recent history, Orange County cities and unincorporated areas have undergone a transition from undeveloped and agricultural land to urban developed areas, resulting in residential and employment population increases and associated increases in the demand for public services, including fire protection and emergency medical services. The contribution of these projects to area growth is reflected in Orange County population, employment and housing projections and has been taken into account in long-range planning efforts on behalf of the County, the City, and the agencies providing public services to the area, including OCFA. At buildout, a total of 9,500 residential units are projected for the Proposed Project Site. If the optional conversion is utilized, a total of 10,700 residential units are projected. As is true for both the 2011 Approved Project and the 2012 Modified Project, the Secured Fire Protection Services Agreement addresses fire service needs for any new development within Irvine. Therefore, as new development is proposed in Irvine, OCFA may condition that development upon a Secured Fire Protection Services Agreement. The obligations set forth in those agreements and/or compliance with other conditions imposed by OCFA for new development will ensure that adequate fire facilities and infrastructure (including new fire stations, funding for any capital improvements necessary to maintain adequate fire protection facilities, equipment, and/or personnel) will be in place and that all performance objectives for fire protection are met.

Additionally, as is true for the 2012 Modified Project, during the development review and permitting processes for other related reasonably foreseeable projects, OCFA would review and approve development plans to ensure that adequate facilities and infrastructure are provided to serve the needs of the fire department. Furthermore, compliance with the existing regulations, standard conditions, and PPPs would ensure that adequate access is provided to all development projects, which further ensures the adequate provision of fire protection and emergency services to residents and businesses within the cumulative projects. Therefore, the 2012 Modified Project's increased demand for fire protection services would not result in cumulatively considerable impacts.

5.10.1.6 Applicable Mitigation Measures from the 2011 Certified EIR

Mitigation Measures HH-3 and HH-4 adopted in the MMRP for the 2011 Approved Project, would apply to the 2012 Modified Project.

HH-3 The Community Development Department, in coordination with the Orange County Fire Authority (OCFA), will be responsible for review of all development plans, which would include evaluation of very high fire severity zones, special fire protection plans, and any requirements for fuel modification zones. Projects potentially impacted by wildland fire hazards will be subject to OCFA Guidelines for "Development Within and Exclusion from Very High Fire Severity Zones" and "Fuel Modification Plans and Maintenance." Additionally, all demolition, renovation, and construction activities in the project area will be subject to review by OCFA to ensure adequate fire protection, water flow, emergency access, design features, etc., according to the standards of the Uniform Fire Code and the California Fire Code. Due to the implementation of these standard fire protection procedures, the Proposed Project is not anticipated to result in significant short- or long-term adverse impacts related to fire hazards.

HH-4 Prior to issuance of occupancy permits of any existing structure at the former MCAS El Toro Base, a fire life-safety evaluation of the structure including recommendations for

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improvements required for compliance with current Building Codes for use of existing structures adopted by the City of Irvine and plans for any required improvements shall be submitted to the Chief Building Official for review and approval.

5.10.1.7 Level of Significance Before Additional Mitigation

No significant impacts relating to fire services have been identified. All 2012 Modified Project impacts related to fire services will be less than significant without mitigation beyond those mitigation measures identified in the 2011 Certified EIR and associated MMRP.

5.10.1.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are required.

5.10.1.9 Level of Significance After Mitigation

With implementation of the PPPs, PDF 10-1, and the already-adopted mitigation measures from the 2011 Certified EIR and associated MMRP outlined above, potential impacts associated with fire protection and emergency services would be reduced to a level that is less than significant. Therefore, no significant impacts relating to fire protection and emergency services have been identified for the 2012 Modified Project.

5.10.2 Police Protection

5.10.2.1 Environmental Setting

The Irvine Police Department (“IPD”) is headquartered at the Irvine Civic Center Complex located at One Civic Center Plaza and has a satellite facility in the Irvine Spectrum Entertainment Complex. The IPD provides all services normally associated with public safety, including patrols, investigations, crime analysis, crime prevention, K-9 unit, Special Operations Unit, forensic investigations, accident investigations/traffic enforcement, Drug Abuse Resistance Education, and emergency management/disaster preparedness. The IPD also has emergency access to helicopter services and mutual aid assistance from surrounding city, county, state, and federal agencies.

The IPD is organized as a geographic policing agency and operates under a full-service community-oriented policing philosophy. Primary response to the Proposed Project Site would be patrol vehicles assigned geographically throughout the City. Response time to calls for service may vary depending on their location at time of dispatch. The IPD's goals for responding to incidents are:

- “Emergency” calls within 6 minutes, 85 percent of the time.
- “Crimes in Progress” calls within 10 minutes, 85 percent of the time.
- “Less Serious Crimes Occurring Now” calls within 20 minutes, 90 percent of the time.
- “Routine calls for service” within 60 minutes, 85 percent of the time (IPD 2012)

Since 1999, Irvine has significantly increased in area, going from 43 to over 65 square miles. The ratio of police officers to population has declined from a 1999 average of 1.13 officers per 1,000 residents to the current authorized ratio of 0.94 officers per 1,000 residents. At any given time, a minimum of 9 sworn officers are available to respond to calls for service anywhere in Irvine. Beat assignments are based on

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projected calls for service. According to the Irvine General Plan “typical planning areas with a population of 10,000 to 20,000 require 1.5 officers per 1,000 persons and a facility size of 5.1 acres.”

The IPD enforces the traffic laws on the local street system. Traffic enforcement on area freeways and in the unincorporated Orange County area is provided by the California Highway Patrol and the Orange County Sheriff’s Department.

James A. Musick Jail Facility

The James A. Musick Jail Facility is owned by the County of Orange and operated by the Orange County Sheriff’s Department. The jail facility is located on a 105-acre parcel in PA 35 located northeast of the Proposed Project Site. The jail facility has permanently assigned staff personnel that guard the jail 24 hours a day. The staff includes deputies, special officers, and correctional service technicians. The jail facility is currently a minimum-security detention and corrections facility. Inmate housing and detention facilities are located in the northeast corner of the jail facility site. The remainder of the site is used for agriculture uses associated with inmate detention.

The IPD also has a mutual aid agreement with the County Sheriff’s Department and is available to assist the Sheriff with law enforcement at the Musick Jail Facility, if requested by the Sheriff.

5.10.2.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- PP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services.

5.10.2.3 The 2011 Approved Project

The 2011 Certified EIR discussed the law enforcement needs of the 2011 Approved Project. As stated in the 2011 Certified EIR, the impacts associated with construction and operation of public facilities were analyzed as part of the planned land uses, which included dedication of land for and the construction of a new police substation.

The 2011 Certified EIR also stated that project-level environmental review, would be required at the time when specific development plans are prepared.

5.10.2.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to both the 2011 Approved Project and the 2012 Modified Project, and that will help to reduce and avoid potential impacts related to police protection and services:

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PPPs 10-2 and 10-3 outlined above under fire protection and emergency services apply to police protection and services as well.

PPP 10-5 The project applicant shall comply with all applicable requirements of the City of Irvine Uniform Security Code (Municipal Code Title 5, Division 9, Chapter 5).

PPP 10-6 Prior to the issuance of the first building permit, a Construction Site Security Plan, per the Irvine Uniform Security Code, Section 5-9-521, shall be approved by the Chief of Police. Said plan shall be incorporated into the plan set approved for building permits (Standard Condition 3.20).

PPP 10-7 Prior to approval of the first certificate of occupancy, the project applicant shall demonstrate to the City's Police Department that an Opticom traffic light control system has been installed at all signalized intersections servicing or adjacent to the Proposed Project Site (Condition of Approval).

PPP 10-8 The project applicant shall implement the concepts of Crime Prevention Through Environmental Design in the design and layout of individual development projects within the Proposed Project Site to reduce criminal opportunity and calls for police service. Implementation of these concepts shall be verified by the City's Police Department during the development review process (Condition of Approval).

Project Design Features

There are no project design features that apply to the 2012 Modified Project to help reduce and avoid potential impacts related to police protection and services.

The following impact analysis addresses impacts that the Initial Study for the 2012 Modified Project disclosed as potentially significant police protection and service impacts of the 2012 Modified Project, as compared to the 2011 Approved Project. The applicable impacts are identified in brackets after the impact statement.

IMPACT 5.10-2: THE 2012 MODIFIED PROJECT WOULD INCREASE THE NEED FOR POLICE PROTECTION FACILITIES AND PERSONNEL AS COMPARED TO THE 2011 APPROVED PROJECT, BUT WOULD NOT RESULT IN A SUBSTANTIAL ADVERSE PHYSICAL IMPACT. [IMPACT PP-1]

Impact Analysis: The 2011 Approved Project's 4,894 dwelling units were estimated to generate 12,405 residents on the Approved Project Site at full project occupancy. Buildout of 9,500 dwelling units at the Proposed Project Site (or 10,700 dwelling units with the optional conversion) under the 2012 Modified Project is estimated to generate a total of 23,728 residents (or 26,679 residents with the optional conversion), based on estimates of persons per household in the City's General Plan. The 2012 Modified Project would create 11,323 more residents than the 2011 Approved Project (or 14,274 more residents with the optional conversion). Therefore, the 2012 Modified Project would create the need for a maximum of 13 more sworn police officers and 5 more nonsworn support personnel beyond what was required for the 2011 Approved Project (based on a maximum additional population of 14,274 residents). (IPD 2012).

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Additional police personnel and associated equipment would be provided through the continued implementation of the City's Strategic Business Plan and annual budget review process. Police department needs are assessed and budget allocations are revised accordingly to ensure that adequate levels of service are maintained throughout the City.

Pursuant to the ARDA, the Applicant has provided a 5.5 acre site located in District 1 North to the City for civic uses. It is anticipated that the City will be funding and constructing a new IPD substation at this location.

During the development review and permitting process, the IPD would review and approve any new development plans to ensure that adequate facilities and personnel are provided to allow the IPD to serve the needs of all of Irvine residents. As with the 2011 Approved Project, all standard conditions and guidelines would be applied to the 2012 Modified Project during the normal review process, including the PPPs outlined above (PPPs 10-2, 10-3, and 10-5 through 10-8). For example, compliance with the Uniform Security Code required by PPP 10-5 would contribute to a reduction in calls for police services. Provision of the Knox boxes and key switches (PPP 10-2) and Click2enter radio access control receivers (PPP 10-3) through pedestrian and vehicle security gates would improve response times within the Proposed Project Site. Additionally, the requirement for project applicants to submit a Construction Security Plan prior to the issuance of building permits (PPP 10-6) would ensure that crime and safety issues that could occur during project construction, including theft of building materials and construction equipment, malicious mischief, graffiti, and vandalism, would not occur.

Therefore, implementation of the 2012 Modified Project is not anticipated to have a significant impact on police protection and services.

5.10.2.5 Cumulative Impacts

Regional growth will result in an increased demand for public services and facilities, including law enforcement. Service providers will continue to evaluate levels of service and potential funding sources to meet demand. Long-range planning for the provisions of public services and facilities is typically based on General Plan growth projections. Through the City's Strategic Business Plan and annual budget review process, police department needs are assessed and budget allocations are revised accordingly to ensure that adequate levels of service are maintained throughout the City.

At buildout under the 2012 Modified Project, a total of 9,500 residential units (or 10,700 residential units with the optional conversion) are projected for the Proposed Project Site, which is expected to increase demand for police services and would contribute to the need to expand facilities. The long-term plans and provisions for police services are consistent with the land use designations and anticipated growth in the City's General Plan, as discussed in more detail in Section 5.9, *Population and Housing*, of this DSSEIR. Therefore, the demand for police services would not be adversely affected by the 2012 Modified Project. Additionally, continued implementation of the City's Strategic Business Plan and annual budget review process, including the construction of a public facility within the Proposed Project Site which may include a new police substation, will ensure that performance objectives for police services are met and provide funding for any capital improvements necessary to maintain adequate police protection facilities, equipment, and/or personnel.

Furthermore, as with the 2012 Modified Project, during the development review and permitting process of other cumulative development projects, the IPD would review and approve development plans to ensure

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that adequate facilities and infrastructure are provided to serve the needs of the IPD. Therefore, the 2012 Modified Project's increased demand for police services would not result in significant cumulative impacts.

5.10.2.6 Applicable Mitigation Measures from the 2011 Certified EIR

No mitigation measures were outlined in the 2011 Certified EIR related to police services.

5.10.2.7 Level of Significance Before Additional Mitigation

No significant impacts relating to police services have been identified. All 2012 Modified Project impacts related to police services will be less than significant without mitigation.

5.10.2.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are required.

5.10.2.9 Level of Significance After Mitigation

With implementation of the PPPs outlined above, the 2012 Modified Project's potential impacts associated with police protection would be less than significant. Therefore, no significant impacts relating to police protection would occur.

5.10.3 School Services

5.10.3.1 Environmental Setting

The Proposed Project Site is within the school service boundaries of the Irvine Unified School District ("IUSD") and the Saddleback Valley Unified School District ("SVUSD"). Prior to the closure of the MCAS El Toro Base, an IUSD elementary school (El Toro Marine Elementary School at 8171 Southeast Trabuco Road) with a 650-student capacity was operated on the former base property. IUSD serves the majority of Existing PAs 30 and 51 (northern and central sections of Existing PA 51, and all of Existing PA 30), with SVUSD serving the southern section of Existing PA 51.

Irvine Unified School District (IUSD)

The majority of the Proposed Project Site is served by IUSD. There are currently 48 schools in IUSD, including 22 elementary schools, five middle schools, four high schools, two alternative education schools, and 15 Title I schools (IUSD 2012). The overall capacity of IUSD schools is shown in Table 5.10-2.

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*Table 5.10-2
Overall Capacity of IUSD Schools*

<i>Grade Level</i>	<i>Current Enrollment</i>	<i>Current Capacity</i>	<i>Current Open Seats</i>
K-6	15,240	18,483	3,243
7-8	3,861	4,435	574
9-12	8,722	9,618	896
TOTAL	27,823	32,536	4,713

Source: Service Provider Correspondence (Ruiz 2012) in Appendix H of this 2012 DSSEIR.

As shown in Table 5.10-2, there is available capacity in IUSD schools at the present time. However, the IUSD's projected enrollment is expected to exceed capacity by Fall of 2014 (Ruiz 2012).

Available school capacity is also an issue for specific schools whose attendance boundaries include the Proposed Project Site. The Proposed Project Site would be located within the attendance boundaries of the schools outlined in Table 5.10-3.

*Table 5.10-3
Capacity of IUSD Schools within Attendance Boundaries
of Proposed Project Site*

<i>School Name</i>	<i>Grade Level</i>	<i>Enrollment (2011)</i>	<i>5-Year Projected Enrollment (not including 2011 Approved Project or 2012 Modified Project)</i>	<i>Capacity (2011)</i>	<i>Open Seats (2011)</i>	<i>5-Year Projected Open Seats (not including 2011 Approved Project or 2012 Modified Project)</i>
Elementary School						
Stongate	K-6	618	1,147	901	283	-246
Woodbury	K-6	730	1,569	1,035	305	-534
Middle School						
PA 40 MS	7-8	Opens 2013	890	-	-	-40
High School						
Irvine	9-12	1,876	2,216	2,142	266	-74
Northwood	9-12	2,159	2,573	2,313	159	-260

Source: Service Provider Correspondence (Ruiz 2011) in Appendix H of the 2011 SEIR.

As shown in Table 5.10-3, the schools whose attendance boundaries include the Proposed Project Site do not have sufficient capacity to accommodate the five-year projected enrollment, not including the students that will be generated by the 2011 Approved Project or 2012 Modified Project. Alternate IUSD elementary and middle schools where capacity is projected to be available is shown in Table 5.10-4.

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*Table 5.10-4
IUSD Elementary and Middle Schools with Capacity
to Serve the Proposed Project Site*

<i>School Name</i>	<i>Grade Level</i>	<i>Enrollment (2011)</i>	<i>5-Year Projected Enrollment (not including 2011 Approved Project or 2012 Modified Project)</i>	<i>Capacity (2011)</i>	<i>Open Seats (2011)</i>	<i>5-Year Projected Open Seats (not including 2011 Approved Project or 2012 Modified Project)</i>
Elementary School						
Brywood	K-6	631	492	697	66	205
Canyon View	K-6	762	602	1,032	270	430
Greentree	K-6	491	468	683	192	215
University Park	K-6	571	637	765	224	158
Turtle Rock	K-6	821	816	1,005	184	189
Bonita Canyon	K-6	507	471	669	162	198
Middle School						
Venado	7-8	654	630	845	191	215
Sierra Vista	7-8	1,071	878	1,101	30	223

Source: Service Provider Correspondence (Ruiz 2011) in Appendix H of the 2011 SEIR.

Additionally, while there may be limited capacity in the very short term, within the next five years, in IUSD high schools, there will be no available capacity at any of IUSD's four existing comprehensive high schools to accommodate high school students of the 2011 Approved Project or the 2012 Modified Project, as shown in Table 5.10-5. However, as discussed below, Heritage Fields and IUSD have entered into a mitigation agreement to construct a new high school within the Proposed Project Site.

*Table 5.10-5
Overall IUSD High School Capacities*

<i>School Name</i>	<i>Grade Level</i>	<i>Enrollment (2011)</i>	<i>5-Year Projected Enrollment (not including 2011 Approved Project or 2012 Modified Project)</i>	<i>Capacity (2011)</i>	<i>Open Seats (2011)</i>	<i>5-Year Projected Open Seats (not including 2011 Approved Project or 2012 Modified Project)</i>
Woodbridge	9-12	2,159	2,573	2,313	159	-260
University	9-12	2,412	2,681	2,618	206	-63
Irvine	9-12	1,876	2,216	2,142	266	-74
Northwood	9-12	2,159	2,573	2,313	159	-260

Source: Service Provider Correspondence (Ruiz 2011) in Appendix H of the 2011 SEIR.

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Saddleback Valley Unified School District (SVUSD)

A portion of the Proposed Project Site is served by SVUSD. There are currently 35 schools in SVUSD, including 24 elementary schools, four intermediate schools, four high schools, one continuation high school, one independent study high school, and one special education school (SVUSD 2012). The enrollment of SVUSD schools that are nearest the Proposed Project Site is shown in Table 5.10-6.

*Table 5.10-6
Capacity of SVUSD Schools Nearest to the
Proposed Project Site*

<i>School Name</i>	<i>Grade Level</i>	<i>Current Enrollment (2010-2011)¹</i>	<i>Current Capacity²</i>	<i>Current Open Seats</i>
Elementary School				
Rancho Canada Elem. School	K-6	673	880	207
Middle School				
Serrano Intermediate	7-8	1,381	1,330	-51
High School				
El Toro HS	9-12	2,833	2,475	-358

Sources:
¹SVUSD 2012a
²2003 OCGP EIR

Despite the current lack of available seats at Serrano Intermediate School and El Toro High School, the SVUSD is currently experiencing a multi-year decline in student enrollment. This decline has impaired the District's ability to maintain its current level of service and could result in staff reductions and school closures (SVUSD 2012b). However, if the schools were to remain open and staff levels were to remain the same, the decline in student enrollment represents available capacity for existing SVUSD schools to accommodate additional students in the future.

Regulatory Setting

State regulations, plans, or guidelines related to schools that are potentially applicable to the 2012 Modified Project are summarized below.

State

Senate Bill 50

Senate Bill 50 ("SB 50", also known as Proposition 1A, codified in California Government Code Section 65995 et seq.) was enacted in 1988 to address how schools are financed and how development projects may be assessed for associated school impacts. SB 50 sets forth the "exclusive methods of considering and mitigating impacts on school facilities" resulting from any state or local planning and/or development project, regardless of whether its character is legislative, adjudicative, or both. Govt. Code § 65996(a). Section 65995 provides that "[t]he payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code in the amount specified in Section 65995 ... are hereby deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving but not limited to, the planning, use, or development of real property, or any change in

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governmental organization... on the provision of adequate school facilities.” Govt. Code § 65995(h). The reference in Section 65995(h) to fees “imposed pursuant to Section 17620 of the Education Code in the amount specified in Section 65995” is a reference to per-square-foot school fees that can be imposed by school districts on new residential and commercial and industrial construction at three levels as follows:

- **Level 1 Fee:** Education Code Section 17620 provides the basic authority for school districts to levy fees against construction for purposes of funding construction or reconstruction of school facilities, subject to limits set forth in Government Code Section 65995. Fees are charged based on “assessable space” – which includes all of the square footage within the perimeter of a structure. The determination of the assessable space within the perimeter of a structure would be made by the City, in accordance with the City’s building standards. Effective May 7, 2012, the Level 1 fee for new residential development within the IUSD is \$3.20 per square foot. The fee for commercial/industrial development within the IUSD is \$0.51 per square foot. The Level 1 fee for new residential development with the SVUSD is \$2.97 per square foot. The fee for commercial/industrial development within the SVUSD is \$0.47 per square foot. (City of Irvine 2012, May)
- **Level 2 Fee:** The alternative school fee which may be collected pursuant to Government Code Section 65995.5. Certain requirements in accordance with Government Code Section 65995.5 have to be met to collect this level of fees. Neither IUSD nor SVUSD are currently charging a Level 2 fee. (City of Irvine 2012, May)
- **Level 3 Fee:** The alternative school fee which may be collected pursuant to Government Code Section 65995.7. This fee is collected only when the State Allocation Board is no longer approving apportionments for new construction funding. Neither IUSD nor SVUSD are currently charging a Level 3 fee.

5.10.3.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- SS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for school services.

5.10.3.3 The 2011 Approved Project

The 2011 Certified EIR discussed student generation and the required school facilities for the 2011 Approved Project. As shown on Table 5.10-7, the 2011 Certified EIR determined that the 2011 Approved Project would generate approximately 2,369 students in IUSD using the district-wide student generation rate, or 2,322 students using the IUSD school facilities needs analysis generation rate. All of the dwelling units associated with the 2011 Approved Project are within IUSD’s service boundary, so no students were generated in SVUSD’s service boundary.

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*Table 5.10-7
2011 Approved Project Student Generation
(IUSD)*

<i>Grade Level</i>	<i>Dwelling Unit Type</i>	<i>Approved Units</i>	<i>Districtwide Student Generation Rate (student per dwelling unit)¹</i>	<i>Projected Students</i>	<i>IUSD School Facilities Needs Analysis Generation Rate (student per dwelling unit)²</i>	<i>Projected Students</i>
K-6	SFD	3,177	0.298	946	.4021	1,277
	SFA	1,173	0.175	205	.1792	210
	MF	362	0.143	52	.0723	26
	Subtotal	4,712³	—	1,203		1,513
7-8	SFD	3,177	0.096	305	.0824	262
	SFA	1,173	0.051	60	.0369	43
	MF	362	0.035	13	.0126	5
	Subtotal	4,712	—	378		310
9-12	SFD	3,177	0.199	632	.1336	424
	SFA	1,173	0.111	130	.0561	66
	MF	362	0.071	26	.0251	9
	Subtotal	4,712	—	788		499
	TOTAL	4,712		2,369		2,322

¹ Source: Service Provider Correspondence (Ruiz 2011) in Appendix H of the 2011 SEIR.

² Source: IUSD School Facilities Needs Analysis (February 2011). The 2011 SEIR includes both the generation numbers in the Service Provider Correspondence and from the IUSD School Facilities Needs Analysis. The former is the actual districtwide student generation rate in IUSD, while the latter is used to calculate SB 50 fees.

³ 4,712 dwelling units were analyzed because the 182 senior units to be developed under the 2011 Approved Project do not generate students.

SFD = single family detached

SFA = single family attached

MF = multifamily

Using IUSD's projections, the 2011 Certified EIR determined that within five years, no open seats would be available at any of the elementary, middle or high school facilities that would otherwise serve the area of the Approved Project Site. However, this impact was determined to be less than significant since developers of the 2011 Approved Project would be required to pay school impacts fees in accordance with SB 50. Those fees would be used by IUSD to reduce any impacts to the school system and would, pursuant to California Government Code Section 65995(h), constitute full mitigation of the impacts of the 2011 Approved Project related to the provision of adequate school facilities. Subsequent to certification of the 2011 SEIR, Heritage Fields entered into a school mitigation agreement with IUSD (the "HF Mitigation Agreement") which included construction of two K-8 schools and one 2,600-student high school.

5.10.3.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies ("PPPs") that apply to both the 2011 Approved Project and the 2012 Modified Project, and which will help to reduce and avoid potential impacts related to school services and facilities:

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PPP 10-9 Pursuant to California Government Code Section 65995, the individual applicants shall pay developer fees to the appropriate school districts at the time building permits are issued; payment of the adopted fees would provide full and complete mitigation of school impacts. Alternatively, the applicant may enter into a school finance agreement with the school district(s) to address mitigation to school impacts in lieu of payment of developer fees. The agreement shall establish financing mechanisms for funding facilities to serve the students from the project. If the applicant and the affected school district(s) do not reach a mutually satisfying agreement, then project impacts would be subject to developer fees.

Project Design Features

There are no project design features that apply to the 2012 Modified Project to help reduce and avoid potential impacts related to school services and facilities.

The following impact analysis addresses impacts that the Initial Study for the 2012 Modified Project disclosed as potentially significant school-related impacts of the 2012 Modified Project, as compared to the 2011 Approved Project. The applicable impacts are identified in brackets after the impact statement.

IMPACT 5.10-3: THE 2012 MODIFIED PROJECT WOULD GENERATE NEW STUDENTS AND IMPACT THE SCHOOL ENROLLMENT CAPACITIES OF AREA SCHOOLS AS COMPARED TO THE 2011 APPROVED PROJECT. [IMPACT SS-1]

Impact Analysis: The 2012 Modified Project would locate 4,606 additional dwelling units on the Proposed Project Site (or 5,806 additional dwelling units with the optional conversion). While all of the 2011 Approved Project's dwelling units are located within the IUSD service boundaries, dwelling units in the 2012 Modified Project would fall within the service boundaries of both IUSD and SVUSD. Of the plausible combinations of dwelling unit types and numbers that could be located in each school district, the combinations that would generate the most students are considered in Tables 5.10-8a, 5.10-8b, 5.10-9a and 5.10-9b. Based on acreages and projected densities, this analysis assumes that between 1,800 to 3,000 additional units could be located within the service boundaries of IUSD compared to the 2011 Approved Project (Scenarios 1 and 2 in Tables 5.10-8a and 5.10-8b, respectively) and that between 2,000 to 3,000 additional units could be located within the service boundaries of SVUSD compared to the 2011 Approved Project (Scenarios 3 and 4 in Tables 5.10-9a and 5.10-9b). All scenarios assume a maximum of 10,700 units, which would generate the highest number of students.

Development of 4,606 additional dwelling units (or 5,806 additional dwelling units with the optional conversion) under the 2012 Modified Project would generate school-age children who would require school services and facilities from IUSD and SVUSD, above those that would be needed to serve the 2011 Approved Project. Using districtwide student generation rates, the 2012 Modified Project would generate approximately 875 to 1,053 additional students in the IUSD and approximately 492 to 738 additional students in the SVUSD compared to the 2011 Approved Project. Using IUSD school needs analysis student generation rates, the 2012 Modified Project would generate approximately 818 to 836 additional students in the IUSD compared to the 2011 Approved Project. The projected additional student population under the 2012 Modified Project is identified in Tables 5.10-8a, 5.10-8b, 5.10-9a, and 5.10-9b.

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Table 5.10-8a
2012 Modified Project Student Generation - IUSD
(Scenario 1)

<i>Grade Level</i>	<i>Dwelling Unit Type</i>	<i>Maximum Additional Units³</i>	<i>Districtwide Student Generation Rate (student per dwelling unit)¹</i>	<i>Projected Additional Students</i>	<i>IUSD School Facilities Needs Analysis Generation Rate (student per dwelling unit)²</i>	<i>Projected Additional Students</i>
K-6	SFD	1,000	0.305	305	0.4021	402
	SFA	800	0.187	150	0.1792	143
	MF	0	0.164	0	0.0723	0
	Subtotal	1,800	—	455	—	545
7-8	SFD	1,000	0.094	94	0.0824	82
	SFA	800	0.051	41	0.0369	30
	MF	0	0.039	0	0.0126	0
	Subtotal	1,800	—	135	—	112
9-12	SFD	1,000	0.195	195	0.1336	134
	SFA	800	0.113	90	0.0561	45
	MF	0	0.071	0	0.0251	0
	Subtotal	1,800	—	285	—	179
	TOTAL	1,800	—	875	—	836

¹ Source: Service Provider Correspondence (Ruiz 2012) in Appendix H of this DSSEIR.

² Source: IUSD School Facilities Needs Analysis (February 2011). This SSEIR includes both the generation numbers in the Service Provider Correspondence and from the IUSD School Facilities Needs Analysis. The former is the actual districtwide student generation rate in IUSD, while the latter is used to calculate SB 50 fees.

³ The exact number of dwelling units in each school district is unknown. Scenarios 1 and 2 represent plausible combinations of dwelling units within the IUSD boundaries on the Proposed Project Site.

SFD = single family detached

SFA = single family attached

MF = multifamily

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Table 5.10-8b
2012 Modified Project Student Generation - IUSD
(Scenario 2)

<i>Grade Level</i>	<i>Dwelling Unit Type</i>	<i>Maximum Additional Units³</i>	<i>Districtwide Student Generation Rate (student per dwelling unit)¹</i>	<i>Projected Additional Students</i>	<i>IUSD School Facilities Needs Analysis Generation Rate (student per dwelling unit)²</i>	<i>Projected Additional Students</i>
K-6	SFD	0	0.305	0	0.4021	0
	SFA	3,000	0.187	561	0.1792	538
	MF	0	0.164	0	0.0723	0
	Subtotal	3,000	—	561	—	538
7-8	SFD	0	0.094	0	0.0824	0
	SFA	3,000	0.051	153	0.0369	111
	MF	0	0.039	0	0.0126	0
	Subtotal	3,000	—	153	—	111
9-12	SFD	0	0.195	0	0.1336	0
	SFA	3,000	0.113	339	0.0561	169
	MF	0	0.071	0	0.0251	0
	Subtotal	3,000	—	339	—	169
	TOTAL	3,000	—	1,053	—	818

¹ Source: Service Provider Correspondence (Ruiz 2012) in Appendix H of this DSSEIR.

² Source: IUSD School Facilities Needs Analysis (February 2011). This SSEIR includes both the generation numbers in the Service Provider Correspondence and from the IUSD School Facilities Needs Analysis. The former is the actual districtwide student generation rate in IUSD, while the latter is used to calculate SB 50 fees.

³ The exact number of dwelling units in each school district is unknown. Scenarios 1 and 2 represent plausible combinations of dwelling units within the IUSD boundaries on the Proposed Project Site.

SFD = single family detached

SFA = single family attached

MF = multifamily

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Table 5.10-9a
2012 Modified Project Student Generation – SVUSD
(Scenario 3)

<i>Grade Level</i>	<i>Dwelling Unit Type</i>	<i>Maximum Additional Units¹</i>	<i>Districtwide Student Generation Rate (student per dwelling unit)²</i>	<i>Projected Additional Students</i>
K-6	Detached	0	0.34	0
	Attached	2,000	0.10	200
	Subtotal	2,000	—	200
7-8	Detached	0	0.065	0
	Attached	2,000	0.046	92
	Subtotal	2,000	—	92
9-12	Detached	0	0.16	0
	Attached	2,000	0.10	200
	Subtotal	2,000	—	200
	TOTAL	2,000	—	492

¹ The exact number of dwelling units in each school district is unknown. The numbers and types of dwelling units analyzed in this table represent a plausible scenario for units developed within SVUSD boundaries on the Proposed Project Site.

² Source: 2003 OCGP EIR

SFD = single family detached

SFA = single family attached

MF = multifamily

Table 5.10-9b
2012 Modified Project Student Generation – SVUSD
(Scenario 4)

<i>Grade Level</i>	<i>Dwelling Unit Type</i>	<i>Maximum Additional Units¹</i>	<i>Districtwide Student Generation Rate (student per dwelling unit)²</i>	<i>Projected Additional Students</i>
K-6	Detached	0	0.34	0
	Attached	3,000	0.10	300
	Subtotal	3,000	—	300
7-8	Detached	0	0.065	0
	Attached	3,000	0.046	138
	Subtotal	3,000	—	138
9-12	Detached	0	0.16	0
	Attached	3,000	0.10	300
	Subtotal	3,000	—	300
	TOTAL	3,000	—	738

¹ The exact number of dwelling units in each school district is unknown. The numbers and types of dwelling units analyzed in this table represent a plausible scenario for units developed within SVUSD boundaries on the Proposed Project Site.

² Source: 2003 OCGP EIR

SFD = single family detached

SFA = single family attached

MF = multifamily

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IUSD

According to IUSD, although there is available capacity today, the projected enrollment within IUSD is expected to exceed capacity by Fall of 2014, with or without the 2011 Approved Project or the 2012 Modified Project. However, new school projects are planned to serve the 2012 Modified Project and communities outside the Proposed Project Site. Per the HF Mitigation Agreement with IUSD, two K-8 schools, each with a maximum capacity of 1,000 students, will be provided within the Proposed Project Site as needed based on the terms of that agreement. In addition, a new high school (HS #5) with a maximum capacity of 2,600 students is planned for construction within the Proposed Project Site. Per the HF Mitigation Agreement, 50 percent of the capacity (1,300 students) at the high school is reserved for future residents of the Heritage Fields Development, including the 2012 Modified Project. Based on the current projections and the provisions contained within the HF Mitigation Agreement with IUSD, IUSD will be able to provide adequate school services and facilities for the students generated by the 2012 Modified Project. (see Service Provider Correspondence [Ruiz 2012] in Appendix H of this DSSEIR).

SVUSD

The current multi-year decline in SVUSD student enrollment represents the potential for existing SVUSD schools to accommodate additional students generated by the 2012 Modified Project. The need for additional services is addressed through compliance with school impact fee assessment. SB 50 (Chapter 407 of Statutes of 1998) sets forth a state school facilities construction program that includes restrictions on a local jurisdiction's ability to condition a project on mitigation of a project's impacts on school facilities in excess of fees set forth in Education Code Section 17620. These fees are collected by school districts at the time of issuance of building permits for commercial, industrial, and residential projects. The Level 1 fee for new residential development within the SVUSD is \$2.97 per square foot. The fee for commercial/industrial development within the SVUSD is \$0.47 per square foot. With payment of the SB 50 Fees, no significant impacts to the SVUSD will result from implementation of the 2012 Modified Project.

5.10.3.5 Cumulative Impacts

Implementation of the 2012 Modified Project in conjunction with other projects in IUSD and SVUSD's service boundaries, could contribute to a potentially significant adverse cumulative impact on IUSD and SVUSD's school facilities and services. However, under state law, development projects are required to pay established school impact fees in accordance with SB 50 at the time of building permit issuance. The funding program established by SB 50 has been found by the Legislature to constitute "full and complete mitigation of the impacts of any legislative or adjudicative act...on the provision of adequate school facilities" [Government Code Section 65995(h)]. The fees authorized for collection under SB 50 are conclusively deemed full and adequate mitigation of impacts on IUSD and SVUSD facilities. Based on the current projections and the provisions contained within both the HF Mitigation Agreement and the Irvine Company Mitigation Agreement, IUSD will be able to provide adequate school services and facilities for the students generated by future growth. Therefore, the increase in the demand for school facilities and services due to cumulative development will be adequately mitigated by the payment of SB 50 fees to SVUSD and compliance with executed school mitigation agreements with IUSD. Accordingly, no cumulative impact upon local school districts is anticipated as a result of the implementation of the 2012 Modified Project and other areawide development activities.

5.10.3.6 Applicable Mitigation Measures from the 2011 Certified EIR

No mitigation measures for the 2011 Approved Project were outlined in the 2011 Certified EIR and associated MMRP.

5.10.3.7 Level of Significance Before Additional Mitigation

No significant impacts relating to school services have been identified. All 2012 Modified Project impacts related to school services will be less than significant without mitigation.

5.10.3.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are required.

5.10.3.9 Level of Significance After Mitigation

No significant impacts relating to school services have been identified for the 2012 Modified Project.

5.10.4 Library Services

5.10.4.1 Environmental Setting

The Orange County Public Library (“OCPL”) provides library services to municipalities and unincorporated parts of Orange County through 33 library branches located throughout the OCPL service area. In addition to providing traditional reading and research materials in the form of books, OCPL branches offer periodicals, government documents, and a variety of audiovisual materials, including CDs, DVDs, cassettes, videocassettes, and “books on tape.”

Irvine is served by three OCPL branches, the Heritage Park Regional Library located at 14361 Yale Avenue, the University Park Library located at 4512 Sandburg Way, and the Katie Wheeler Library located at 13109 Old Myford Road. The amount of library space and number of books between the three branches total an estimated 43,376 square feet and 357,976 volumes (Cowell 2012).

In addition, there are three colleges and universities, each with academic libraries, in Irvine. Residents can use these academic libraries to supplement the public library branches, as each academic library allows nonstudents to purchase a library card that provides borrowing privileges. Concordia University requires a Concordia University ID card or a guest card that may be purchased for \$25 a year for most library services. Irvine Valley College and University of California, Irvine (“UCI”), both public universities, allow Irvine residents to use their materials in the library at no charge. In order to check out materials a library card is required, which allows checkout at all libraries within the UC system and costs \$80 per year. The UCI Library system consists of the Jack Langson Library (formerly known as the Main Library) at 152,957 square feet, the Science Library, Gateway Study Center on the Main Campus, and the Grunigen Medical Library at the Medical Center (located off campus).

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Public Library Facilities and Resources

Orange County

OCPL has adopted a level of service standard ratio of 0.2 square foot of library space per capita and 1.5 volumes per capita needed to serve residential communities (Irvine 2012). There is no level of service standard for nonresidential land uses. Residents of Orange County can use any library within the OCPL system if they are a member; this analysis focuses on OCPL libraries within the City of Irvine.

As shown in Table 5.10-10, based on the OCPL level of service standard, the existing and planned OCPL library capacity in Irvine can serve a population of 216,880 in terms of facility square footage and 275,366 residents based upon the number of volumes. As shown in Table 5.9-2, *City of Irvine Population and Housing, 2000-2010*, of Section 5.9, *Population and Housing*, of this DSSEIR, the City's population estimate in 2010 was 212,375, which is within the current service capacity of the OCPL library system.

*Table 5.10-10
Orange County Public Library Facilities
(City of Irvine)*

<i>Facility</i>	<i>Facility Square Footage</i>	<i>Number of Volumes</i>
OCPL Standard Service Ratio		
Heritage Park	20,693	190,309
University Park	11,433	115,725
Wheeler Branch	11,250	51,942
Total	43,376	357,976
Standard Service Ratio	0.2 square feet per capita	1.3 volumes per capita
Population Served	216,880 residents	275,366 residents
City of Irvine Standard Service Ratio		
Heritage Park	20,693	190,309
University Park	11,433	115,725
Wheeler Branch	11,250	51,942
Total	43,376	357,976
Standard Service Ratio	0.5 square feet per capita	2.5 volumes per capita
Population Served	86,752 residents	143,190 residents

Source: Service Provider Correspondence (Cowell 2012).

City of Irvine

The City's General Plan has adopted a level of service standard ratio of 0.5 square foot of library facility per capita and 2.5 volumes per capita needed to serve residential communities. There is no service standard for nonresidential land uses.

As shown in Table 5.10-10, based on the City's level of service standard, the existing and planned library capacity within Irvine can serve a population of 86,752 in terms of facility square footage and 143,190 residents based upon the number of volumes. As shown in Table 5.9-2, *City of Irvine Population and Housing, 2000-2010*, of Section 5.9, *Population and Housing*, of this DSSEIR, the City's population estimate in 2010 was 212,375; thus, the City currently has inadequate library services based on City service standards.

Library Services Advisory Committee

In 2005, the City established an ad hoc Library Task Force, and in October 2006 designated a standing Library Services Advisory Committee. The purpose of the Library Services Advisory Committee is to lead the expansion of library services in Irvine and oversee on-going library operations and maintenance. A Library Needs Assessment Study to evaluate the state of library services and identify options for enhanced library services within Irvine was completed in October 2006. The study determined that new facilities are needed, especially in light of anticipated population growth. The City adopted the 17 recommendations presented in the Library Needs Assessment Study, such as addressing the feasibility of expanded and improved library services, including the provision of a higher standard of service ratio than the current OCPL standard. The service level recommended in the Library Needs Assessment Study is 0.5 square foot of library space and 2.5 volumes per capita instead of the OCPL standard of 0.2 square foot of library space and 1.5 volumes per capita. Based on the recommended higher service standards, the City is currently underserved by both library square footage and number of library volumes.

Library Alternatives Study

In August 2007, the City prepared a Library Alternatives Study to provide information to the City Council on the feasibility of establishing at least one new library in Irvine, based on the recommendations in the Library Needs Assessment Study. The Library Alternatives Study presents six potential sites for new libraries, and identifies library facility options, including construction of a new community (i.e. branch) library and/or a new main library, totaling 39,000 square feet, at the Great Park. The study further recommends that new library facilities be included in the Citywide Capital Improvement Program and Public Facilities Master Plan that would allow the City Council to assess development of new library facilities. At this time there are no capital funds designated for expansion of the OCPL system.

5.10.4.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- LS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for library services.

5.10.4.3 The 2011 Approved Project

The 2011 Certified EIR, which analyzed the impact of the 2011 Approved Project on library services, stated that since a portion of property taxes are specifically allocated for capital improvement and operating costs for the OCPL system, additional residents of the Approved Project Site would be required to make a financial contribution to expand and/or construct new library facilities. The 2011 Certified EIR also stated that development of the 2011 Approved Project would be required to comply with PPP 10-10 (see below). For the above reasons, implementation of the 2011 Approved Project was not anticipated to have a significant impact on library services.

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5.10.4.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to both the 2011 Approved Project and the 2012 Modified Project, and that will help to reduce and avoid potential impacts related to library services and facilities:

PPP 10-10 In the event that a city-wide library impact fee is adopted and in force, the developer shall pay this fee prior to issuance of building permits for new development. Since a 39,000 square foot library facility is approved for development within Existing PA 51, this would satisfy payment of a library impact fee, if adopted by the City at a future date.

Project Design Features

There are no project design features that apply to the 2012 Modified Project to help to reduce and avoid potential impacts related to library services and facilities.

The following impact analysis addresses impacts that the Initial Study for the 2012 Modified Project disclosed as potentially significant impacts for the 2012 Modified Project, as compared to the 2011 Approved Project. The applicable impacts are identified in brackets after the impact statement.

IMPACT 5.10-4: DEVELOPMENT OF THE 2012 MODIFIED PROJECT WOULD CAUSE INCREASED DEMAND FOR LIBRARY SERVICES AS COMPARED TO THE 2011 APPROVED PROJECT, BUT WOULD NOT RESULT IN A SUBSTANTIAL ADVERSE PHYSICAL IMPACT. [IMPACT LS-1]

Impact Analysis: Impacts to library services are determined only by the development of residential land uses. The 2012 Modified Project would locate 4,606 residential units on the Proposed Project Site in addition to the previously approved 4,896 residential units. With the optional conversion, the 2012 Modified Project would add 5,806 additional residential units, as compared to the 2011 Approved Project. The addition of residential units not previously analyzed by the 2011 Certified EIR would cause an increase in demand for library services above that generated by the 2011 Approved Project.

The City has recognized the need for new library facilities, which would not only serve the residents of the 2012 Modified Project, but also those of all of Irvine. To meet the demand of library services, the City completed a Library Needs Assessment Study in October 2006 to evaluate the state of library services and identify options for enhanced library services within the City. The study determined that new facilities are needed, especially in light of anticipated population growth.

The 2007 Library Alternatives Study prepared by the City presents six potential sites for new libraries, and identifies library facility options, including construction of a new branch library and/or a new main library, totaling 39,000 square feet, at the Great Park. The study further recommends that new library facilities be included in the Citywide Capital Improvement Program and Public Facilities Master Plan that would allow the City Council to assess development of new library facilities. However, at this time there are no capital funds designated for expansion of the OCPL system.

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Because a portion of property taxes are specifically allocated for capital improvement and operating costs for the OCPL system, future residents of the 2012 Modified Project would be required to make a financial contribution to expand and/or construct new library facilities. Development of the 2012 Modified Project would also be required to comply with PPP 10-10.

Furthermore, residents of Irvine, including future residents of the 2012 Modified Project, have access to any branch of OCPL library system, including those within neighboring cities such as Tustin and Costa Mesa, and also those within academic libraries and resources of the three colleges and universities within the City. However, future additional residents of the 2012 Modified Project are anticipated to be primarily served by the existing and future libraries within Irvine.

For all of the above reasons, implementation of the 2012 Modified Project is not anticipated to have a significant impact on library services.

5.10.4.5 Cumulative Impacts

Population growth within Irvine will increase the demand for library services beyond the capacity of the existing and currently planned OCPL system within Irvine. Based on the OCPL levels of service, Irvine would need an additional 17,473 square feet and 37,539 volumes to serve the projected 2030 population of 304,242 people. Based on the City standard service ratio, the City would need an additional 108,745 square feet and 402,629 volumes to serve the projected 2030 population of 304,242 people.

The City acknowledges that new library facilities and improvements to library services are needed in the future and library service enhancements and funding options are being investigated by the City. As required by PPP 10-10, if a library impact fee on development is established and in force at the time of development, the project applicant would be required to pay all applicable fees and thereby contribute to future development of a new library facility. Since a 39,000-square foot-library facility is approved for development within Existing PA 51 as part of the 2011 Approved Project, this would satisfy payment of a library impact fee, if adopted by the City at a future date.

5.10.4.6 Applicable Mitigation Measures from the 2011 Certified EIR

No mitigation measures were outlined in the 2011 Certified EIR and associated MMRP.

5.10.4.7 Level of Significance Before Additional Mitigation

No significant impacts relating to library services have been identified. All 2012 Modified Project impacts related to library services will be less than significant without mitigation.

5.10.4.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are required.

5.10.4.9 Level of Significance After Mitigation

No significant impacts relating to library services have been identified.

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5.9 POPULATION AND HOUSING

This section of the DSSEIR examines the potential for the 2012 Modified Project, as compared to the 2011 Approved Project, to cause socioeconomic impacts, relating to population, employment, and demand for housing, particularly housing with cost/rent ranges defined as “affordable.”

The analysis in this section is based, in part, on these sources:

- *Orange County Projections 2010 Modified*, Center for Demographic Research, CSUF, January 2012.
- *Table 2: E-5 City/County Population and Housing Estimates*, California Department of Finance, January 2010 and January 2011.
- *American Community Survey 1-Year Estimates*, United States Bureau of the Census, 2010.
- *US Census*, United States Bureau of the Census, 2000 and 2010.

5.9.3 Environmental Setting

The following environmental setting is provided for informational purposes only; consistent with applicable case law, the baseline for the DSSEIR's analyses is the 2011 Approved Project.

5.9.3.1 Local and Regional Planning Projections

The Proposed Project Site's demographics are best examined in the context of existing and projected population for the Orange County region and Irvine. Information on population, housing, and employment for the Proposed Project Site is available from several sources:

U.S. Census Data

The United States Bureau of the Census publishes population, household and employment data gathered through the decennial census. This data provides a record of historic growth rates in the Orange County and the City of Irvine. The most recent Census was conducted in 2010 (“2010 Census”) and this data is used, when available, for analysis in this section of the DSSEIR. Table 5.9-1 shows Orange County's population, housing and rate of growth between 2000 and 2010 based on this data. Table 5.9-2 presents Irvine's population, housing, and rate of growth between 2000 and 2010 based on this 2010 Census data. Employment data from the 2010 Census is not available at the time of preparation of this DSSEIR, so this DSSEIR utilizes the Orange County Projections 2010 Modified employment data adopted by the City of Irvine.

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Table 5.9-1

Orange County Population and Housing, 2000–2010

	2000	2010	Change, 2000–2010	Percent Change, 2000–2010
Population	2,846,289	3,010,232	163,943	5.8%
Housing Units	969,484	1,048,907	79,423	8.2%

Source: 2010 U.S. Census.

Table 5.9-2

City of Irvine Population and Housing, 2000–2010

	2000	2010	Change, 2000–2010	Percent Change, 2000–2010
Population	143,072	212,375	69,303	48.4%
Housing Units	53,711	83,899	30,188	56.2%

Source: 2010 U.S. Census.

As shown above in Tables 5.9-1 and 5.9-2, the growth rates of population and housing units in Irvine between 2000 and 2010 were substantially higher than the corresponding rates for Orange County as a whole.

Orange County Projections

Orange County jurisdictions and public agencies develop demographic estimates and projections to provide a common foundation for regional and local planning, policymaking, and infrastructure provision. Orange County agencies contract with the Center for Demographic Research at California State University, Fullerton, to develop and periodically update demographic projections for Orange County. The Orange County Council of Governments adopted the most recent projections, entitled Orange County Projections 2010 Modified (“OCP-2010”), in January 2012. The OCP-2010 dataset is the result of the approved OCP update and revision process which took place during 2009 and 2010, and was adjusted based on 2010 Census data.

OCP-2010 projects the level and distribution of population, housing, and employment growth based on detailed information about growth trends, development and local land use provided by Orange County jurisdictions and public agencies; infrastructure, utility and service providers; and the private sector. The Center for Demographic Research adjusts its projections to reflect California Employment Development Department employment projections. OCP-2010 accounts for projects in progress, such as the 2011 Approved Project, including the 1,269 density bonus units. Table 5.9-3 presents OCP-2010 projections for Orange County and City population, housing and employment for 2008 through 2035.

As shown in Table 5.9-3, forecast growth rates for population, dwelling units, and employment in Irvine over the 2010–2035 period are all higher than the corresponding rates for the entire Orange County area.

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Table 5.9-3

OCP-2010 Projections for Orange County and the City of Irvine, 2010–2035

	2010	2020	2035	Change, 2010–2035	
				Total	Percent
Orange County					
Population	3,019,356	3,266,107	3,421,228	401,872	13.3%
Dwelling Units	1,050,330	1,105,238	1,180,929	130,599	12.4%
Employment	1,490,296	1,625,805	1,778,845	288,549	19.4%
City of Irvine					
Population	215,644	265,605	304,242	88,598	41.1%
Dwelling Units	84,189	103,303	120,158	35,969	42.7%
Employment	209,152	241,962	291,813	82,661	39.5%
Source: CDR 2012.					

Source: CDR 2012.

Regional Projections

Prior to the adoption of OCP-2010, OCP-2006 projections were the most recently released Center for Demographic Research projections. The OCP-2006 projections were submitted as the County's input to the regional growth projections prepared for the six-county Southern California region by the Southern California Association of Governments ("SCAG"). OCP-2006 incorporated earlier but similar versions of the 2011 Approved Project (e.g. without the density bonus units which were granted pursuant to state law in 2008) into the projections, and assumed 3,625 residential units for the Proposed Project Site. The most current regional projections are SCAG's adopted 2008 Regional Forecast for Orange County, which is similar, but not identical to OCP-2006. SCAG's regional forecast modifies the OCP-2006 growth distribution to reflect regional transportation and housing policies and is not constrained by local general plans like OCP-2006. OCP-2010 projections, which include the 2011 Approved Project's density bonus units, will be used for SCAG's next regional forecast, which is currently in draft form.

Population Growth – Orange County

Population growth in Orange County has maintained a strong but diminishing pace in recent decades (US Census). From 1990 to 2000 Orange County's population increased by 18.1 percent, or 1.8 percent per year. From 2000 to 2010, Orange County's population increased by only 5.8 percent, or 0.6 percent per year. The OCP-2010 projected population for Orange County in 2010 was 0.3 percent higher than the 2010 population estimate of 3,010,232 set forth in the 2010 Census. Although Orange County's population is growing, OCP-2010 forecasts that the rate of population growth will slow considerably over time. From 2010 through 2035, OCP-2010 projects that Orange County's population will grow by an average of 16,075 people per year, which amounts to approximately 0.5 percent per year.

Population Growth – Irvine

According to the US Census, the population in Irvine grew 30.4 percent in the 1990's and 48.4 percent between 2000 and 2010, outpacing population growth in Orange County as a whole. The OCP-2010 projected population for Irvine in 2010 to be approximately 1.5 percent higher than the actual 2010 population estimate set forth in the 2010 Census. According to the OCP-2010, Irvine residents were projected to account for approximately 7 percent of Orange County's population in 2010. During the 2010–2035 period, the percentage of Orange County's population residing in Irvine is forecasted to

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increase from 7.1 percent to 8.9 percent. Irvine's average annual population increase is projected to be 3,544 people (or 1.2 percent per year) between 2010 and 2035, resulting in an estimated 2035 population of 304,242.

Housing Growth – Orange County

According to the US Census, housing growth in Orange County has surpassed the pace of population growth. From 1990 to 2000, the number of housing units County-wide increased a total of 11 percent, with an average annual growth rate of 9,441. The number of housing units in Orange County was reported as 969,484 in the 2000 Census, and 1,048,907 units in the 2010 Census (similar to the OCP-2010 unit count of 1,050,330), an 8.2 percent increase from the 2000 Census. OCP-2010 projects that the County's housing stock will increase by 130,599 units (12.4 percent) between 2010 and 2035, with an average increase of 5,224 dwelling units per year. The California Department of Finance estimated the 2011 dwelling unit vacancy rate in Orange County to be 5.39 percent, as compared to 8.06 percent for the State.

Housing Growth – Irvine

According to the US Census, during the 1990's, Irvine's housing stock increased by 27 percent (an average annual growth rate of 1,149 units), which was substantially greater than Orange County's housing stock 11 percent growth rate during that same period. Similarly, Irvine's housing stock growth outpaced Orange County's between 2000 and 2010, growing 56.2 percent as compared to Orange County's 8.2 percent growth. The OCP-2010 forecasts that Irvine's housing stock will increase by 35,969 units between 2010 and 2035 (an average annual growth rate of 1,439 units or 1.7 percent), which is slower than the 5.8 percent average annual growth rate that occurred in Irvine between 2000 and 2010 (US Census). The OCP-2010 also forecasts that Irvine's housing stock as a proportion of Orange County's housing stock will increase from 8.0 percent to 10.2 percent during the 2010 to 2035 time period. Estimated housing units by type in Irvine are described below in Table 5.9-4. Irvine's housing stock consists of 52.7 percent single-family units, compared with 62.6 percent single-family units County-wide. According to the California Department of Finance, the 2011 dwelling unit vacancy rate for Irvine was 6.4 percent, which is above the County-wide rate of 5.39 percent.

*Table 5.9-4
Housing Units by Type (Estimated), City of Irvine, 2010*

	<i>Units</i>	<i>Percent of Total Units</i>
Single-Family Detached	28,138	34.7%
Single-Family Attached	14,605	18.0%
Multi-Family, 2 to 4 units per structure	5,091	6.3%
Multi-Family, 5 or more units per structure	32,155	39.7%
Mobile Homes	1,022	1.3%
Total	81,011	100%

Source: DOF 2010

Note: Department of Finance data is used in this Table because 2010 US Census housing data is not yet available for the City of Irvine by unit type. US Census data identified a total of 83,899 housing units in the City of Irvine in 2010.

Housing affordability and availability have become major housing policy issues within the City, the Orange County region, and throughout the State. The City prepared and adopted its most recent Housing

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Element update to provide a long-term blueprint for housing within the context of local and regional trends and housing production and housing affordability goals.

Housing affordability is a function of income and housing cost. Between January and December 2011, median home sales prices in the City ranged from \$430,000 to \$808,000, depending on zip code (Dataquick.com, January 2012). To encourage and facilitate new affordable housing opportunities, in 2003 the City adopted an inclusionary housing ordinance (Ordinance No. 04-15 and 07-11) ("Housing Ordinance") that requires 15 percent of all new housing units in projects containing 50 or more units to be restricted to very low, low, and moderate income households.

As part of the 2011 Approved Project, the Applicant has already committed to providing 544 affordable housing units, as required by the Housing Ordinance. As part of the 2012 Modified Project, a revised Master Affordable Housing Plan, including a Density Bonus Application, and a Density Bonus Agreement will be required to reflect the proposed increased number of units.

A Final Regional Housing Needs Assessment (RHNA) was prepared for the planning period of January 1, 2006 to June 30, 2014, and was adopted on July 12, 2007 by SCAG's Regional Council. The RHNA prepared by SCAG defines the housing unit construction goals for the region. For the planning period of January 1, 2006 through June 30, 2014, Orange County was allocated a RHNA of 82,332 units. Irvine, with six percent of the population and eight percent of the land area of the County, was allocated a RHNA target of 35,660 units—more than 43 percent of the entire County's RHNA. The proposed distribution of those units in Irvine across various income categories is set forth below in Table 5.9-5.

The City's 2008–2014 Housing Element notes that affordable housing goals and implementation programs are needed to meet production targets set by California's Department of Housing and Community Development ("HCD") to encourage each jurisdiction in the State to provide its fair share of very low, low and moderate income housing needed during SCAG's planning period. HCD's numeric housing production goals are known as RHNA targets. State law requires the Housing Element of the General Plan to identify RHNA targets and document programs designed to meet them (California Government Code § 65580 et seq.). To that end, the City's Housing Element analyzes housing needs within the City's demographic context; reviews potential market, governmental, and other constraints to meeting the City's housing needs; evaluates the resources available to meet housing needs; and establishes policies and objectives to make progress in meeting the City's housing needs during the planning period. The City's 2008–2014 Housing Element and the updated Housing Element adopted by the Irvine City Council in January 2012 and was certified by HCD in March 2012.

The City of Irvine's 2008–2014 Housing Element contains a package of goals, objectives and policies designed to meet its 2008–2014 RHNA targets as well as other housing needs in Irvine. Table 5.9-5 shows the City's RHNA target of providing 35,660 additional units to meet the needs of very low, low, moderate, and upper income households in Irvine.

SCAG is in the process of updating the RHNA targets for the 2014–2021 RHNA cycle; the City's proposed target is 12,149 units over this 8-year period. The draft target is lower than the 2006–2014 target, as it takes into account the most recent Census and growth forecast data, and the current economic conditions. SCAG is scheduled to adopt the final 2014–2021 targets in October of 2012. The City's new target will replace its current target, with no carryover of units.

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*Table 5.9-5
City of Irvine Regional Housing Needs
Assessment Targets, 2008-2014*

<i>Household Income Category</i>	<i>Target (units)</i>
Very Low Income ¹	7,735
Low Income ²	6,408
Moderate Income ³	7,139
Upper Income ⁴	14,378
Total	35,660

Source: City of Irvine 2008-2014 Housing Element November 2011

¹ 0-50 percent of Area Median Income (AMI)

² 51-80 percent of AMI

³ 81-120 percent of AMI

⁴ Greater than 120 percent of AMI

Current Housing on the Proposed Project Site

There are no residents currently living on the Proposed Project Site. At the time of preparation of the 2003 OCGP EIR, there were 4,380 vacant group quarters and 1,209 vacant single-family residential units on the Approved Project Site that remained from the Site's previous use as a Marine Corps base. Since that time, the majority of the units have been demolished and the remaining units are not fit for human habitation.

Employment Growth – Orange County

According to OCP-2010, there were a total of 1.5 million jobs in Orange County in 2010 (as shown in Table 5.9-3). OCP-2010 projects that jobs in Orange County will grow by 288,549 between 2010 and 2035, which amounts to an average of 11,542 additional jobs per year (a 16.2 percent increase in jobs over the 25-year period). The 2010 American Community Survey 1-Year Estimates show that Orange County had an unemployment rate of 11.0 percent for the population that is 16 years of age and older.

Employment Growth – Irvine

According to the 2000 Census, the number of jobs in Irvine increased by 16 percent during the 1990's, with an average annual increase of 2,555 jobs. OCP-2010 projects a 28.3 percent employment increase, or a total of 82,661 new jobs, in Irvine between 2010 and 2035, which represents an average annual increase of 3,306 jobs. In 2035, Irvine is projected to garner 6.1 percent of County-wide employment, as projected by OCP-2010. The 2010 American Community Survey 1-Year Estimates show that Irvine had an unemployment rate of 7.8 percent for the population that is 16 years of age and older.

Current Employment on the Proposed Project Site

There are currently limited employment-generating uses on the Proposed Project Site, consisting of the Great Park and the Orange County Great Park Western Sector Development (Phase 1). Total employment on the Proposed Project Site at the time of preparation of this DSSEIR is estimated at less than 50 jobs based on the types of uses.

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Jobs-Housing Ratio

The jobs-housing ratio is a general measure of the balance between the number of jobs and number of housing units in a geographic area, without regard to economic constraints or individual preferences. The jobs-housing ratio is one indicator of a project's effect on growth and quality of life in the vicinity of the project. No ideal jobs-housing ratio has been adopted in state, regional, or city policies; jobs-housing goals and ratios are advisory only. SCAG applies the jobs-housing ratio at the regional and subregional level as a tool for analyzing the fit between jobs, housing, and infrastructure. The American Planning Association ("APA") is an authoritative resource for community planning best practices, including recommendations for assessing jobs-housing ratios. Although the APA recognizes that an ideal jobs-housing ratio will vary from jurisdiction to jurisdiction, its recommended target for an appropriate jobs-housing ratio is 1.5 with a recommended range of 1.3 to 1.7 (Weltz, 2003).

As shown below in Table 5.9-6, Orange County provided a jobs-housing ratio of 1.42 jobs per household in 2010. Based on the range of 1.3 to 1.7, Orange County is relatively balanced. In the future, Orange County is anticipated to remain well-balanced as a result of economic and demographic forces expected within the planning period. OCP-2010 projects that Orange County's jobs-housing ratio will be 1.51 in 2035.

Employment will continue to grow as Orange County captures a steady portion of the region's growth due to its business and educational resources, and its coastal location, which will translate to employment growth in Irvine. OCP-2010 projects that Irvine will outpace Orange County's housing and employment growth rates between 2010 and 2035. Estimated jobs-housing ratios for Irvine in 2010 and 2035, based on OCP-2010 projections, are 2.48 and 2.43, respectively, well above the target ratio of 1.5.

*Table 5.9-6
Projected Jobs to Housing Ratio for Orange County and the City of Irvine
2010–2035 Based on OCP-2010*

	2010	2020	2035
Orange County			
Dwelling Units	1,050,330	1,105,238	1,180,929
Employment	1,490,296	1,625,805	1,778,845
Jobs-housing Ratio	1.42	1.47	1.51
City of Irvine			
Dwelling Units	84,189	103,303	120,158
Employment	209,152	241,962	291,813
Jobs-housing Ratio	2.48	2.34	2.43

5.9.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally be considered to have a significant effect on the environment if the project would:

- P-1 Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

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- P-2 Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- P-3 Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Chapter 8, *Impacts Found Not to be Significant*, of this DSSEIR substantiates the City's determination that the following impacts of the 2012 Modified Project, as compared to the 2011 Approved Project, with respect to population and housing would be less than significant:

- Impacts P-2 and P-3. Since the Proposed Project Site is a former military base without any permanent housing, it will neither displace existing housing, nor displace a substantial number of people. Accordingly, those impacts will not be addressed in the following analysis.

5.9.3 The 2011 Approved Project

In 2003, the City of Irvine approved 3,625 dwelling units accommodating approximately 9,000 residents on the Proposed Project Site. In 2008, the City granted 1,269 density bonus residential units to Heritage Fields pursuant to state law. The 2011 Certified EIR for the 2011 Approved Project analyzed the located of those density bonus units on the tentative tract maps and concluded that development of 4,894 dwelling units would generate a population of approximately 12,405 residents, based on estimates of persons per household in the City's General Plan (Irvine, 2002). Consequently, the 2011 Approved Project includes a total of 4,894 residential units and a total of approximately 12,405 residents.

The 2011 Approved Project was included in the City's data for OCP-2010, which will in turn be used by SCAG to establish regional growth forecasts.

Therefore, the population, housing and employment growth created by the 2011 Approved Project is consistent with OCP-2010 regional planning projections, and will be consistent with anticipated forecasts forthcoming from SCAG. OCP-2010 estimates a jobs-housing balance of 2.48 in Irvine in 2010 and 2.43 in 2035. Therefore, the 2011 Approved Project, including the density bonus housing units, is expected to contribute to making the community more jobs-housing balanced over time, compared to the project analyzed in the 2003 OCGP EIR, which would have resulted in a 4.55 jobs-housing ratio within Existing PAs 30 and 51. Orange County's jobs-housing balance is projected to change from 1.42 to 1.51 during the same 25-year period, still well within the range recommended by APA (Weltz, 2003).

The 2011 Certified EIR for the 2011 Approved Project also concluded that the 2011 Approved Project's 6,585,594 square feet of non-residential development would create approximately 16,510 jobs. The 2011 Certified EIR for the 2011 Approved Project also concluded that the 4,894 dwelling units and 16,510 jobs, for an on-site jobs-housing ratio of 3.37, would result in a better impact on the jobs-housing ratio in the jobs-rich City of Irvine, compared to the project analyzed in the 2003 OCGP EIR, which would have resulted in a 4.55 jobs-housing ratio. However, since the 3.37 jobs-housing ratio was still greater than Irvine's existing jobs-housing ratio of 2.48, the 2011 Approved Project's significant impact to the jobs-housing balance remained. No other significant impacts to population and housing were identified in the 2011 Certified EIR.

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*Table 5.9-7
Non-Residential Land Uses Analyzed in the 2011 Certified EIR*

<i>Land Use</i>	<i>Square Feet</i>
Institutional (school and college/university)	1,492,594
Institutional (OCTA facility and remote airport terminal)	176,000
Institutional (other)	300,000
R&D	2,600,000
Cultural (museum/library and fairgrounds/expo)	1,176,000
Office	75,000
Commercial (retail and auto sales)	402,000
Recreational (sports park and golf course)	51,000
Cemetery (mausoleum and mortuary)	50,000
Warehouse	263,000
2011 Approved Project Total	6,585,594
Total Estimated Employment Generation	16,510

5.9.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to the 2012 Modified Project, as well as to the 2011 Approved Project, that will help to reduce and avoid potential impacts related to population and housing:

PPP 9-1 *Compliance with the City’s Housing Element.* Compliance with the City’s Housing Element policies provides a strategic blueprint to ensure the siting of new very low, low, and moderate income housing units in future development projects under the 2012 Modified Project to help the City continue to meet its State fair share housing targets. The Housing Ordinance mandates that all projects with 50 or more housing units shall set-aside 15 percent of the total units for very low, low, and moderate income households.

Project Design Features

There are no project design features of the 2012 Modified Project related to population and housing. The following impact analysis addresses the one population and housing impact threshold that the Initial Study for the 2011 Modified Project disclosed as a potentially significant impact. The applicable threshold is identified in brackets after the impact statement.

IMPACT 5.9-1 *THE 2012 MODIFIED PROJECT WILL GENERATE ADDITIONAL POPULATION GROWTH ASSOCIATED WITH THE PROPOSED INCREASE IN RESIDENTIAL UNITS AS COMPARED TO THE 2011 APPROVED PROJECT, HOWEVER, THE 2012 MODIFIED PROJECT RESULTS IN IMPROVED JOBS-HOUSING BALANCE WITHIN THE CITY AND COUNTY. [IMPACT PH-1]*

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Impact Analysis:

Population

The 2012 Modified Project proposes to convert a portion of the existing non-residential entitlement into residential uses. The 2012 Modified Project consists of 4,894 already approved dwelling units plus 4,606 additional dwelling units (3,412 base units and 1,194 DB units). The 2012 Modified Project also includes the option to convert up to 535,000 square feet of non-residential Multi-Use intensity to up to 889 residential units and 311 DB units, granted pursuant to State law. Two development options are proposed for District 1 North and South, however, these options only differ by the location of the uses, not by the number of units or amount of nonresidential square footage. Table 5.9-8 reports the numbers of residential units by type, population generated by type, as part of the 2012 Modified Project. As shown below, the 2012 Modified Project would generate a total population on the Proposed Project Site of 23,728 persons, or 26,679 persons with the optional non-residential to residential conversion.

Irvine's estimated population at General Plan buildout (estimated to be post-2030) is 287,419, an increase of 75,044 over the 2010 Census population. Thus, estimated 2012 Modified Project-generated population growth is approximately 32 percent of the forecasted City population increase after 2010 based on General Plan development and population projections or approximately 36 percent with the optional conversion. Development of the 2011 Approved Project is anticipated by the City's adopted General Plan.

*Table 5.9-8
Estimated Population Generation for the 2012 Modified and 2011 Approved Projects*

	<i>Residential Unit Types</i>	<i>Number of Units</i>	<i>Estimated Persons per Household¹</i>	<i>Total Persons</i>
2012 Modified Project² without Optional Conversion	Single-Family	1,194	2.94	3,510
	Multifamily	3,412	2.29	7,814
Subtotal:		4,606		11,324
2012 Modified Project with Optional Conversion²	Single-Family	1,505	2.94	4,425
	Multifamily	4,301	2.29	9,849
Subtotal:		5,806		14,274
2011 Approved Project	Not Applicable	4,894	Not Applicable	12,405
Combined Total Without Optional Conversion	Not Applicable	9,500	Not Applicable	23,728
Combined Total with Optional Conversion		10,700		26,679

¹ Estimated based on the City's General Plan.

² Excluding the 4,894 units associated with the 2011 Approved Project.

Compared to the 2011 Approved Project, development of the 2012 Modified Project would result in an increase of 11,324 residents on the Proposed Project Site, or 14,274 residents with the optional conversion. Although the additional units and population associated with the 2012 Modified Project were not specifically included in the OCP-2010 projections, these increases are consistent with the overall growth projections for the City of Irvine and for the region based on SCAG forecasts. The 2012 Modified Project would generate a total of 23,728 residents, representing approximately 32 percent of the forecasted City population increase after 2010. With the optional conversion, the 2012 Modified Project,

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combined with the 2011 Approved Project, would generate a total of 26,679 residents, representing approximately 36 percent of the forecasted City population increase after 2010. This growth is within the forecasted City population increase, therefore the net incremental impact on population resulting from the 2012 Modified Project would be less than significant.

No mitigation measures are proposed in this DSSEIR as impacts of the 2012 Modified Project related to population would be less than significant.

Housing

The 2012 Modified Project would include the development of 4,606 additional dwelling units or 5,806 additional dwelling units with the optional conversion, as described above in Table 5.9-7. This number of housing units is within regional projections for housing growth in Irvine; OCP-2010 forecasts the number of units in Irvine to increase by 34,324 units between 2010 and 2035. The additional housing units associated with the 2012 Modified Project represents approximately 13 percent (or 17 percent with the optional conversion) of forecasted housing growth in Irvine and 3.5 percent (or 4.5 percent with the optional conversion) of forecasted growth in the Orange County between 2010 and 2035.

The 9,500 total housing units (or 10,700 with optional conversion) in the 2012 Modified Project when combined with the 2011 Approved Project represents 27.7 percent (or 29.7 percent with optional conversion) of forecasted housing growth in Irvine and 7.3 percent (or 8.2 percent with optional conversion) in Orange County from 2010 to 2035. This amount of growth in housing units is consistent with the SCAG regional forecasts and generally consistent the OCP-2010 growth projections for Irvine and Orange County and would result in a less than significant impact on housing.

The City is in the process of identifying opportunities for housing that will meet the very low, low, and moderate income targets prescribed in its 2014–2021 RHNA cycle; the City's proposed target is 12,149 units over this 8-year period. Implementation of the 2012 Modified Project will assist the City in meeting its 2014-2021 RHNA target. Furthermore, the City has self-imposed inclusionary housing requirements for all projects providing 50 or more residential units. As required by the City of Irvine's Housing Ordinance, both the 2011 Approved Project and the 2012 Modified Project include the development of the affordable housing above the 15 percent minimum required by the City. Thus, the 2012 Modified Project would contribute to satisfaction of the RHNA targets for a range of affordability levels and City-established inclusionary housing requirements. Therefore, like the 2011 Approved Project, the 2012 Modified Project would result in a less than significant impact on housing.

Employment

Operational Employment

The 2011 Certified EIR for the 2011 Approved Project analyzed the development of approximately 6,586,000 square feet of non-residential land uses with the potential to create 16,510 jobs. The 2011 Approved Project job-generation is shown in Table 5.9-7.

The 2012 Modified Project increases residential development opportunities and decreases non-residential entitlement, and modifies the types of non-residential uses. Using the Irvine Transportation Analysis Model (ITAM), this proposed modification represents an increase of 1,062 jobs (or a decrease of 542 jobs with the optional conversion), bringing the total number of jobs in the 2012 Modified Project to 17,572

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(or 15,968 with the optional conversion). The employment projected for Existing PAs 30 and 51 is not lower than the employment projected for the 2011 Approved Project despite the reduction of non-residential square footage associated with the 2012 Modified Project. This is because the types of non-residential uses included in the 2012 Modified Project generate greater employment than the non-residential uses included within the 2011 Approved Project. The jobs to be generated by 2012 Modified Project represent 21.3 percent (or 19.3 percent with the optional conversion) of Irvine's projected employment growth between 2010 and 2015 and 6.1 percent (or 5.5 percent with the optional conversion) of Orange County's projected employment growth between 2010 and 2035. Therefore, the employment generated by the 2012 Modified Project is within these growth forecasts.

No mitigation measures for operational employment related impacts were proposed in the SEIR and none are being proposed in this DSSEIR, because the 2012 Modified Project is within existing employment growth projections for both the Irvine and the Orange County. Jobs-housing balance, which represents another method of analyzing potential impacts related to operational employment, is discussed later in this section under its own heading.

Construction Employment

The 2012 Modified Project would involve construction of 9,500 residential units and 4,902,200 square feet on non-residential land uses (or 10,700 residential units and 4,367,200 square feet of non-residential land uses with the optional conversion), parks and open space, and construction of other improvements such as roadways and utilities. Project construction would generate a substantial number of temporary jobs. The number and scale of construction projects would vary during different phases of construction; thus, the number of construction jobs generated would likewise vary. As identified in the 2011 Certified EIR, construction of the 2011 Approved Project is expected to generate a maximum of 763 construction jobs during the peak construction period, based on the CalEEMod air quality modeling data completed for the 2011 Approved Project. As discussed in Section 5.3, *Air Quality*, peak construction activities would remain the same, so no additional construction jobs are anticipated as compared to the 2011 Approved Project. As with operational employment, it is expected that most construction employment would be absorbed from the regional labor force rather than attracting new workers into the region. Thus, construction employment is not expected to have a substantial impact on population growth in Irvine and surrounding communities, especially given the eight percent unemployment rate in Orange County.

The 2011 Certified EIR concluded that the development of the 2011 Approved Project would not result in a significant impact with respect to short-term (i.e. construction) employment. Since both the 2011 Approved Project and the 2012 Modified Project would result in generally the same number of construction jobs, the 2012 Modified Project would have a less than significant impact related to construction employment.

No mitigation measures are proposed in this DSSEIR as impacts related to construction employment would be less than significant without mitigation.

Jobs-Housing Ratio

Irvine is a jobs-rich community and residential projects help improve the balance between job-generating uses and homes. The 2012 Modified Project contains more residential units and less non-residential square footage than the 2011 Approved Project, and therefore it will contribute to improving the jobs-housing balance for the City of Irvine as a whole.

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The 2011 Approved Project had a jobs-housing ratio of 16,510/4,894, or 3.37. The 2012 Modified Project has a jobs-housing ratio of 17,572/9,500 (or 1.85) without the optional conversion and 15,968/10,700 (or 1.49) with the optional conversion. As shown in Table 5.9-6, the City had a jobs-housing ratio of 2.48, well above the industry standard for an ideal jobs-housing ratio in the range of 1.3 to 1.7 (Weltz, 2003). The additional housing proposed by the 2012 Modified Project would therefore assist the City in achieving a healthier jobs-housing balance as compared to the 2011 Approved Project, with the ratio of 1.85 being much closer to the 1.3 to 1.7 target balance. The ratio of 1.49 (for the 2012 Modified Project with the optional conversion) would actually fall within the middle of the target range. In addition, the 2012 Modified Project would have a favorable impact with respect to regional goals for providing housing near jobs-rich areas because it would develop housing units on the Proposed Project Site and the housing will be located near existing employment concentrations, including the Irvine Spectrum and near transit including the I-405, I-5, SR-133 and the Irvine Transportation Center.

The 2012 Modified Project would increase the cumulative total number of housing units in Irvine. In doing so, the 2012 Modified Project's cumulative housing impact provides benefits for the regional housing goals that promote housing production in jobs-rich areas, City Housing Element goals regarding workforce housing, and state-mandated fair share housing targets.

The 2011 Certified EIR concluded that development of the 2011 Approved Project would result in a significant impact because it would contribute to the then-existing jobs-housing imbalance. This conclusion did not change in the 2011 Certified EIR. That imbalance would improve with implementation of the 2012 Modified Project because the 2012 Modified Project proposes an increased amount of housing opportunities. Thus, as compared to the 2011 Approved Project, the 2012 Modified Project would represent an improvement with respect to Irvine's jobs-housing imbalance. For these reasons, the jobs-housing impact is not considered a significant impact.

5.9.5 Cumulative Impacts

The geographic scope of the following cumulative impact analysis is the OCCOG Subregion and the City of Irvine. OCP-2010 projects that in 2035, Irvine will have a population of 304,242; a total of 120,158 housing units and a total of 291,813 jobs. OCP-2010 incorporated the projected growth associated with the 2011 Approved Project, as well as the cumulative projects listed in Section 4.5, *Assumptions Regarding Cumulative Impacts*, of this DSSEIR.

The development of the 2012 Modified Project would add more housing and slightly increase the number of operational jobs, as compared to the 2011 Approved Project, which will help improve Irvine's jobs-housing ratio in the future. Irvine's projected jobs-housing balance shown in Table 5.9-6, which incorporated the 2011 Approved Project, is 2.34 in 2020 and 2.43 in 2035. Irvine's projected jobs-housing balance with the 2012 Modified Project improves to 2.32 in 2020 and 2.39 in 2035. With the optional conversion, the jobs-housing balance improves further to 2.26 in 2020 and 2.35 in 2035. The 2012 Modified Project with or without the optional conversion maintains Orange County's jobs-housing ratio of 1.47 in 2020.

The 2012 Modified Project will contribute to improving the jobs-housing balance in the future. For these reasons, the cumulative population and housing impacts are not considered a significant cumulative impact.

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5.9.6 Applicable Mitigation Measures from the 2011 Certified EIR

No mitigation measures were available at the time the 2011 Certified EIR was prepared to reduce the 2011 Approved Project's significant impact related to operational employment and to the jobs-housing ratio.

5.9.7 Level of Significance Before Additional Mitigation

Upon implementation of regulatory requirements and PPPs, Impact 5.9-1 related to population and housing of the 2012 Modified Project, as compared to the 2011 Approved Project, would be less than significant.

5.9.8 Additional Mitigation Measures for the 2012 Modified Project

No mitigation measures are required because no significant impacts related population and housing have been identified for the 2012 Modified Project.

5.9.9 Level of Significance After Additional Mitigation

As compared to the 2011 Certified EIR, which concluded that development of the 2011 Approved Project would result in a significant impact with respect to jobs-housing ratio, the 2012 Modified Project would have a less than significant impact because of the conversion of existing non-residential entitlement to residential uses. Implementation of the 2012 Modified Project would result in an improved jobs-housing ratio as compared to the 2011 Approved Project.

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5.8 NOISE

This section of the DSSEIR compares the potential noise impacts of the 2012 Modified Project to those of the 2011 Approved Project. It reviews the fundamentals of sound; reviews federal, state, and local noise guidelines, policies, and standards; reviews noise levels at existing off-site receptor locations; evaluates potential noise impacts associated with the 2012 Modified Project as compared to the 2011 Approved Project; and recommends additional mitigation measures, where necessary, to reduce noise impacts of the 2012 Modified Project. This evaluation uses procedures and methodologies as specified by the California Department of Transportation (“Caltrans”) and the Federal Highway Administration (“FHWA”). This section is based, in part, on the following technical studies:

- *Heritage Fields Project 2012 General Plan Amendment / Zone Change Noise Impact Analysis*, Urban Crossroads, June 14, 2012 (the "Noise Study").
- *Heritage Fields Project 2012 General Plan Amendment / Zone Change Traffic Impact Analysis*, Urban Crossroads, June 21, 2012 (the "Traffic Study").

These studies are included as Appendix G and I to this DSSEIR, respectively.

5.8.1 Environmental Setting

Terminology/Noise Descriptors

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

The following are brief definitions of terminology used in this section:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (“dB”).** A unitless measure of sound on a logarithmic scale.
- **A-Weighted Decibel (“dBA”).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (“L_{eq}”).** The mean of the noise level averaged over the measurement period, regarded as an average level.
- **Day-Night Level (“L_{dn}”).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.

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- Community Noise Equivalent Level (“CNEL”). The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the levels occurring during the period from 7:00 PM to 10:00 PM and 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

Characteristics of Sound

When an object vibrates, it radiates part of its energy as acoustical pressure in the form of a sound wave. Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate this human, frequency-dependent response, the A-weighted filter system is used to adjust measured sound levels. The normal range of human hearing extends from approximately 0 dBA to 140 dBA.

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. Because of the physical characteristics of noise transmission and of noise perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 5.8-1 presents the subjective effect of changes in sound pressure levels.

*Table 5.8-1
Decibel Changes, Loudness and Energy Loss*

<i>Sound Level Change</i>	<i>Relative Loudness</i>	<i>Acoustic Energy Loss</i>
0 dBA	Reference	0%
-3 dBA	Barely Perceptible Change	50%
-5 dBA	Readily Perceptible Change	67%
-10 dBA	Half as Loud	90%
-20 dBA	1/4 as Loud	99%
-30 dBA	1/8 as Loud	99.9%

Source: *Highway Traffic Noise Analysis and Abatement Policy and Guidance*, U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch, June 1995.

Sound levels are generated from a source and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. This phenomenon is known as spreading loss. Generally, sound levels from a point source will decrease by 6.0 dBA for each doubling of distance. Sound levels for a highway line source vary differently with distance because sound pressure waves propagate along the line and overlap at the point of measurement. A closely spaced, continuous line of vehicles along a roadway becomes a line source and produces a 3.0 dBA decrease in sound level for each doubling of distance. However, experimental evidence has shown that where sound from a highway propagates close to "soft" ground (e.g., plowed farmland, grass, crops, etc.), a more suitable drop-off rate to use is not 3.0 dBA but rather 4.5 dBA per distance doubling (FHWA 2010).

When sound is measured for distinct time intervals, the statistical distribution of the overall sound level during that period can be obtained. The L_{eq} is the most common parameter associated with such measurements. The L_{eq} metric is a single-number noise descriptor that represents the average sound level over a given period of time. For example, the L_{50} noise level is the level that is exceeded 50 percent of the

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time. This level is also the level that is exceeded 30 minutes in an hour. Similarly, the L_{02} , L_{08} and L_{25} values are the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour. Other values typically noted during a noise survey are the L_{min} and L_{max} . These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, State law requires that, for planning purposes, an artificial dB increment be added to quiet-time noise levels in a 24-hour noise descriptor called the CNEL or L_{dn} .

Effects of Noise Exposure

Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. Physical damage to human hearing can occur with prolonged exposure to noise levels higher than 85 dBA. High ambient or background noise levels are widespread and generally more concentrated in urban areas than in less developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Table 5.8-2 shows the typical noise levels emitted by common noise sources.

*Table 5.8-2
Typical Noise Levels and Their Subjective Loudness and Effects*

<i>Common Outdoor Activities</i>	<i>Common Indoor Activities</i>	<i>A-Weighted Noise Level (dBA)</i>	<i>Subjective Loudness</i>	<i>Effects of Noise</i>	
Threshold of Pain		140	Intolerable or deafening	Hearing Loss	
Near Jet Engine		130			
		120			
Jet Flyover at 1,000 feet	Rock Band	110			
Loud Auto Horn		100	Very Noisy		Speech Interference
Gas Lawn Mower at three feet		90			
Diesel Truck at 50 feet at 50 mph	Food Blender at 3 feet	80			
Noisy Urban Area, Daytime	Vacuum Cleaner at 10 feet	70	Loud	Sleep Disturbance	
Heavy Traffic at 300 feet	Normal speech at 3 feet	60			
Quiet Urban Daytime	Large Business Office	50	Moderate		No Effect
Quiet Urban Nighttime	Theater, Large Conference Room (background)	40			
Quiet Suburban Nighttime	Library	30	Faint	No Effect	
Quiet Rural Nighttime	Bedroom at Night, Concert Hall (background)	20			
	Broadcast/Recording Studio	10	Very Faint		
Lowest Threshold of Human Hearing	Lowest Threshold of Human Hearing	0			

Source: Noise Technical Supplement by Caltrans, October 1998.

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Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities such as railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is described as the velocity and the rate of change of the speed is described as the acceleration. Each of these descriptors can be used to correlate vibration to building damage, and acceptable equipment vibration levels.

During construction of a development project, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may experience annoyance due to noise generated from vibration of a structure or items within a structure. This type of vibration is best measured in velocity and acceleration.

The three main wave types of concern in the propagation of groundborne vibrations are surface or Rayleigh waves, compression or P-waves, and shear or S-waves.

- Surface or Rayleigh waves travel along the ground surface. They carry most of their energy along an expanding cylindrical wave front, similar to the ripples produced by throwing a rock into a lake. The particle motion is more or less perpendicular to the direction of propagation (known as retrograde elliptical).
- Compression or P-waves are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal, in a push-pull motion. P-waves are analogous to airborne sound waves.
- Shear or S-waves are also body waves, carrying their energy along an expanding spherical wave front. Unlike P-waves, however, the particle motion is transverse, or perpendicular to the direction of propagation.

The peak particle velocity ("PPV") or the root mean square ("RMS") velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal and RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage.

The units for PPV velocity is normally inches per second (in/sec). Often, vibration is presented and discussed in dB units in order to compress the range of numbers required to describe the vibration. In this study, all PPV and RMS velocity levels are in in/sec and all vibration levels are in dB relative to one microinch per second (abbreviated as VdB). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Even the more persistent Rayleigh waves decrease relatively quickly as they move away from the source of the vibration. Human-made vibration problems are, therefore, usually confined to short distances (500 feet or less) from the source.

Construction operations generally include a wide range of activities that can generate groundborne vibration. In general, blasting and demolition of structures generate the highest vibrations. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at distances within 200 feet of the vibration sources. Heavy trucks can also generate groundborne

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vibrations, which vary depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, differential settlement of pavement, etc., all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration of normal traffic on streets and freeways with smooth pavement conditions. Trains generate substantial quantities of vibration due to their engines, steel wheels, and heavy loads.

Regulatory Setting

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. The City regulates noise through the City of Irvine Municipal Code, Chapter 2, Noise (Sections 6-8-201 through 6-8-209), also known as the City's Noise Ordinance, discussed below. Potential noise impacts were evaluated based on the City of Irvine Municipal Code and General Plan, FHWA methodology, and Federal Transit Administration ("FTA") methodology to determine whether a significant adverse noise impact would result from the construction and operation of the 2012 Modified Project as compared to the 2011 Approved Project.

State of California Noise Requirements

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise insulation standards and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared according to guidelines adopted by the Governor's Office of Planning and Research. The purpose of the Noise Element is to "limit the exposure of the community to excessive noise levels."

In addition, CEQA requires that all known environmental effects of a project be analyzed, including environmental noise impacts. Under CEQA, a project has a significant impact if the project exposes people to noise levels in excess of thresholds, which can include standards established in the local general plan or noise ordinance.

State of California Building Code

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, and the California Building Code. These noise standards are applied to new construction in California for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

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Land Use Compatibility Criteria

The noise standards specified in the Noise Element of the City of Irvine General Plan are a guideline to evaluate the acceptability of the noise levels generated by traffic flow. These standards are used for assessment of long-term traffic-related noise impacts on land uses. The City uses the state's land use compatibility standards shown below in Table 5.8-3 to determine the compatibility of a proposed land use based on the exterior noise environment.

Based on these standards, the City has developed policies to ensure land use compatibility when placing new land uses. The City uses an exterior noise level of 65 dBA CNEL as the critical criterion for assessing the compatibility of residential land uses with noise sources. The City requires that, for new residential land uses, the noise levels in the exterior areas considered by the City to be noise sensitive not exceed 65 dBA CNEL. In addition, the City requires that commercial developments not exceed an indoor noise level of 55 dBA CNEL and that residential developments not exceed an indoor noise level of 45 dBA CNEL with windows closed, which is based on the California Building Code.

*Table 5.8-3
State of California Land Use Compatibility for Exterior Community Noise*

<i>Land Use Category</i>	<i>Noise Range (L_{dn} or CNEL), dBA</i>			
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>
Passively used open spaces	50	50–55	55–70	70+
Auditoriums, concert halls, amphitheaters	45–50	50–65	65–70	70+
Residential: low-density single-family, duplex, mobile homes	50–55	55–70	70–75	75+
Residential: multifamily	50–60	60–70	70–75	75+
Transient lodging: motels, hotels	50–60	60–70	70–80	80+
Schools, libraries, churches, hospitals, nursing homes	50–60	60–70	70–80	80+
Actively used open spaces: playgrounds, neighborhood parks	50–67	–	67–73	73+
Golf courses, riding stables, water recreation, cemeteries	50–70	–	70–80	80+
Office buildings, business commercial and professional	50–67	67–75	75+	–
Industrial, manufacturing, utilities, agriculture	50–70	70–75	75+	–

Source: Office of Noise Control, California Department of Health, 1976.

Noise Range I—Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Noise Range II—Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Noise Range III—Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Noise Range IV—Clearly Unacceptable: New construction or development should generally not be undertaken.

Transportation-Related Noise Standards

To control transportation-related noise, the Noise Element of the City of Irvine General Plan establishes guidelines, listed in Table 5.8-4, below, for acceptable community noise levels. The City of Irvine General Plan provides specific noise level standards for all land use categories that are used to regulate traffic-related noise level impacts (from noise sources such as arterial roads, freeways, airport and railroads). For

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noise-sensitive uses that contain habitable dwellings, the Noise Element establishes both exterior and interior noise level standards.

*Table 5.8-4
City of Irvine Interior and Exterior Noise Standards*

<i>Land Use Categories</i>		<i>Energy Average (dBA CNEL)</i>	
Categories	Uses	Interior¹	Exterior²
Residential	Single family Multi-Family	45 ³ / 55 ⁴	65 ⁷
	Mobile Home	–	65 ⁵
Commercial/Industrial	Hotel, motel, transient lodging	45	65 ⁶
	Commercial, retail, bank, restaurant	55	–
	Office building, professional office, research & development	50	–
	Amphitheater, concert hall, auditorium, meeting hall	45	–
	Gymnasium (Multipurpose)	50	–
	Health Clubs	55	–
	Manufacturing, warehousing, wholesale, utilities	65	–
Institutional	Hospital, school classroom	45	–
	Church, library	45	65
Open Space	Parks	45	–

Source: Table F-1 of the City of Irvine General Plan Noise Element.

Interpretation:

¹ Interior environment excludes bathrooms, toilets, closets and corridors.

² Limited to private yard of single family homes, multifamily private patio or balcony served by a means of exit from inside, mobile home park, hospital patio, park's picnic area, school's playground, and hotel and motel recreation areas.

³ Noise requirement with closed windows. Mechanical ventilation system or other means of natural ventilation shall be provided pursuant to Appendix Chapter 12, Section 1208 of the Uniform Building Code.

⁴ Noise level with open windows, if they are used to meet natural ventilation requirement.

⁵ Exterior noise level such that interior noise level will not exceed 45 dB CNEL.

⁶ Except those areas affected by aircraft noise.

⁷ Multi-family developments with balconies that do not meet the 65 CNEL are required to provide occupancy disclosure notices to all future tenants regarding potential noise impacts.

For noise-sensitive residential uses, the Noise Element requires that exterior noise levels not exceed 65 dBA CNEL for outdoor living areas and that interior noise levels not exceed 45 dBA CNEL. Noise-sensitive exterior uses are limited to the private yards of single-family homes, multi-family private patios or balconies served by a means of exit from inside, mobile home parks, hospital patios, park picnic areas, school playgrounds, and hotel and motel recreation areas. Multi-family developments with balconies that do not meet the 65 dBA CNEL exterior noise level standard are required to provide occupancy disclosure notices to all future tenants regarding potential noise impacts.

Nontransportation/Stationary Source Noise Standards

The City's Noise Ordinance (Irvine Municipal Code, Title 6 [Public Works], Division 8 [Pollution], Chapter 2 [Noise]) (adopted in 1975 and revised in February 2005) establishes the maximum permissible noise level from a stationary source that may intrude into adjoining property. Section 6-8-204 (General Provision) of the City's Noise Ordinance establishes noise level standards for various land use categories

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affected by stationary noise sources. For residential properties, the exterior noise level shall not exceed 55 dBA during daytime hours (7:00 AM to 10:00 PM) and shall not exceed 50 dBA during the nighttime hours (10:00 PM to 7:00 AM) for more than 30 minutes in any hour. For events with shorter duration, these noise levels are adjusted upwards accordingly, as shown in Table 5.8-5.

*Table 5.8-5
City of Irvine Exterior Noise Standards by Noise Zone*

Noise Zone	Time Interval	Noise Standard (L_{eq})				
		L_{50}	L_{25}	L_8	L_2	L_{max}
Zone 1: hospitals, libraries, churches, schools, and residential properties	7:00 AM to 10:00 PM	55	60	65	70	75
	10:00 PM to 7:00 AM	50	55	60	65	70
Zone 2: professional office and public institutional	Anytime	55	60	65	70	75
Zone 3: commercial, excluding professional office	Anytime	60	65	70	75	80
Zone 4: industrial	Anytime	70	75	80	85	90

Source: City of Irvine, Municipal Code, Title 6, Division 8, Chapter 2, Noise.

Noise standards shall be reduced by five dB for impact, or predominant tone noise or for noises consisting of speech or music. In the event that the noise source and the affected property are within different noise zones, the noise standards of the affected property shall apply.

Maintenance of property may exceed the noise standards, so long as maintenance activities that exceed the noise limits in Table 5.8-5 are restricted to the hours of 7:00 AM through 7:00 PM Monday through Friday or 9:00 AM through 6:00 PM Saturdays.¹ In addition, the City further restricts the maximum noise levels of leaf blowers and hours of use to 8:00 AM through 5:00 PM Monday through Friday and 9:00 AM through 5:00 PM on Saturdays.²

Commercial Deliveries/Pickups

Commercial deliveries or pickups for commercial properties that share a property line with any residential property are required to limit the hours of delivery/pickup service to 7:00 AM through 10:00 PM daily, as outlined in the City's Noise Ordinance.³

Construction Noise Standards

The City's Noise Ordinance regulates the timing of construction activities and includes special provisions for sensitive land uses. Section 6-8-205.A (Special Provisions) of the Municipal Code states that construction activities and agricultural operations may occur between the hours of 7:00 AM and 7:00 PM Monday through Friday, and 9:00 AM to 6:00 PM on Saturdays. No construction shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or authorized representative. Trucks, vehicles, and equipment that are making or involved with deliveries, loading, or transfer of materials, equipment service, or maintenance of any devices or appurtenances for or within any construction project in the City are also subject to these prohibitions.

¹ *Id.* Section 6-8-205B.

² *Id.*, Section 6-8-205C.

³ *Id.* Section 6-8-205A.

Noise Standard Exemptions

The City's Noise Ordinance also determines what specific activities are exempt from the noise provisions. Section 6-8-205.D of the Municipal Code states that activities lawfully conducted on public parks, public playgrounds, and public or private school grounds are exempt from the Noise Ordinance's provisions.

5.8.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would result in:

- N-1 Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- N-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- N-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- N-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- N-5 For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
- N-6 For a project within the vicinity of a private airstrip, expose people residing or working the project area to excessive noise levels.

Chapter 8, *Impacts Found Not to Be Significant*, substantiates the City's determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR), that the following impacts would not be significant for the 2012 Modified Project, as compared to the 2011 Approved Project: N-2, N-5 and N-6. The City determined that those impacts were sufficiently analyzed in the 2011 Certified EIR and that implementation of the changes proposed by the 2012 Modified Project would not change the conclusions of the 2011 Certified EIR with respect to those impacts.

Therefore, Impacts N-2, N-5 and N-6 will not be addressed further in this section.

City of Irvine Thresholds

Noise Compatibility

The noise standards specified in the City's Noise Element are used to evaluate the acceptability of the noise levels under the thresholds stated above. Based on the noise compatibility criteria, the City has developed policies and guidelines to ensure land use compatibility when placing new land uses. The City requires that the exterior areas for new residential land uses not exceed 65 dBA CNEL. The City also requires that new commercial developments achieve an indoor impact noise standard of 55 dBA CNEL, and that new residential developments achieve an indoor impact noise standard of 45 dBA CNEL with windows closed, which is based on the California Building Code.

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Stationary Source Noise

The City's Noise Ordinance establishes the maximum permissible noise level that may intrude into an adjoining property or dwelling unit (see Table 5.8-5, above).

Substantial Increase in Traffic Noise Levels

The traffic noise thresholds used by the City are based on human tolerance to noise and are widely used for assessing traffic noise impacts. In general, people tend to compare intruding noise to the existing background noise. If the new noise is readily identifiable or considerably louder than the background noise level, it has the potential to be objectionable or annoying (Caltrans 2009). Consequently, the noise threshold for an increase in traffic noise levels is based on the potential for traffic noise to become considerably louder than the ambient noise level. In general, noise levels must increase by 10 dBA in order to double ambient noise levels. An increase of 5 dBA is readily perceptible to the public and a 3 dBA increase is barely perceivable to the average healthy human ear (Caltrans 2009).

Consistent with the noise analysis in the 2003 OCGP EIR, the Environmental Noise Assessment prepared for the 2011 Certified EIR identified a traffic noise screening analysis threshold of 1.5 dBA for all project-related traffic noise level increases where the resulting noise levels would be in excess of 65 dBA. Therefore, the 2011 Certified EIR required further analysis if any project-related traffic noise level increased more than 1.5 dBA within residential areas (2011 SEIR, Section 5-7, *Noise*, p. 5.7-29). Although changes in noise levels of 3 dBA are considered "barely perceptible," the 2011 Certified EIR utilized this 1.5 dBA noise level screening threshold to be conservative. For consistency, the 1.5 dBA screening threshold was also used in the noise technical report prepared by Urban Crossroads for the 2012 Modified Project (see Appendix G of this DSSEIR) that has been used for the analysis in this section.

5.8.3 The 2011 Approved Project

The 2011 Approved Project includes 4,894 residential units, approximately 6,585,000 square feet of non-residential uses and associated infrastructure within the Approved Project Site. Of the non-residential uses, 5,312,564 square feet are located within the Heritage Fields Development Districts and the balance of 1,273,030 square feet within the Great Park, County Parcels and other areas.

Operational Mobile-Source Noise

The 2011 Certified EIR concluded that no increases of 1.5 dBA or greater were projected to occur with implementation of the 2011 Approved Project and, as a result, no project or cumulative noise impacts associated with any of the roadway segments analyzed would occur.

Operational Stationary Source Noise

Project-related sources of stationary noise would include activities associated with commercial and retail uses, including parking lots, mechanical equipment, and loading/unloading activities, and activities related to residential uses, including air conditioners, yard care equipment, and outdoor activities. However, the 2011 Certified EIR concluded that no significant impacts would occur, as stationary source noise is regulated by the City through the City's Municipal Code to ensure that they are controlled to acceptable levels. Consequently, the 2011 Certified EIR concluded that the 2011 Approved Project would not result in stationary source project-level or cumulative noise impacts. Construction Noise and Vibration

As discussed in the 2011 Certified EIR, to minimize the potential construction noise impacts associated with the 2011 Approved Project and to ensure that the greatest distance between noise sources and sensitive receptors during construction activities, the project applicant or its successor will be required to implement PPPs 8-1 and 8-3 and PDF 8-1 that were set forth in the 2011 SEIR. Future projects within the Approved Project Site and other off-site projects within the vicinity of the Approved Project Site will be required to comply with the City noise regulations or those of other adjacent jurisdictions, which reduce potential impacts to a less than significant level. Therefore, 2011 Certified EIR concluded that construction-related noise impacts would be controlled within the areas close to each construction site and would therefore be unlikely to combine with noise generated from other construction sites. The 2011 Certified EIR concluded that with implementation of the existing regulations, PPPs, PDFs and mitigation measures, potential noise impacts associated with 2011 Approved Project would be reduced to a level that is less than significant.

5.8.4 Environmental Impacts of the 2012 Modified Project

Methodology

The following section outlines the methods and procedures used to model and analyze the future off-site noise environment and potential impacts of the 2012 Modified Project.

FHWA Traffic Noise Prediction Model

The roadway noise impacts from vehicular traffic were projected using a computer program that replicates the FHWA Traffic Noise Prediction Model- FHWA-RD-77-108 ("FHWA Model"). The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level ("REMEL"). Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial); the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway); the total average daily traffic ("ADT"); the travel speed; the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume; the roadway grade; the angle of view (e.g., whether the roadway view is blocked); the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping); and the percentage of total ADT that flows each hour throughout a 24-hour period.

Table 5.8-6 presents the FHWA Traffic Noise Prediction Model roadway parameters used in the noise analysis of the 2012 Modified Project. Soft site conditions were used to develop the noise level contour boundaries. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation.

Table 5.8-7 presents the hourly traffic flow distributions (vehicle mixes) used for the noise analysis of the 2012 Modified Project. The vehicle mixes provide the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Traffic Noise Prediction Model based on roadway types. The City roadway mix is based on the typical vehicle mix data published on December 14, 1993, by the County of Orange Land Use/Noise Compatibility Manual.

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*Table 5.8-6
Roadway Parameters*

<i>Location</i>	<i>Roadway Classification</i>	<i>Number of Lanes</i>	<i>Right of Way (Feet)</i>	<i>Vehicle Speed (MPH)</i>
Irvine ¹	Local Collector	2	56	35
	Secondary Arterial	4	114	50
	Primary Highway	4	116	55
	Major Highway (6 lanes)	6	140	60
	Major Highway (8 lanes)	8	154	65
Other ²	Collector	2	66	40
	Secondary	4	80	45
	Primary Arterial	4	100	50
	Major Arterial	6	120	55
	Principal	8	140	60

Source: Noise Study prepared by Urban Crossroads, Inc., June 2012 (see Appendix G of this DSSEIR).

Notes: MPH = miles per hour

¹ Road classifications and design speeds based on City Standard Plans dated March 19, 2009.

² The other jurisdictions include Aliso Viejo, Laguna Hills, Laguna Woods, Lake Forest, Mission Viejo, Orange, Orange County, and Tustin.

*Table 5.8-7
Hourly Traffic Flow Distribution¹*

<i>Motor Vehicle Type</i>	<i>Daytime (7 AM to 7 PM)</i>	<i>Evening (7 PM to 10 PM)</i>	<i>Nighttime (10 PM to 7 AM)</i>	<i>Total % Traffic Flow</i>
Automobiles	77.5%	12.9%	9.6%	97.42%
Medium Trucks	84.8%	4.9%	10.3%	1.84%
Heavy Trucks	86.5%	2.7%	10.8%	0.74%

Source: Noise Study prepared by Urban Crossroads, Inc., May 2012 (see Appendix G of this DSSEIR).

¹ Hourly traffic flow distribution data published by the County of Orange Land Use/Noise Compatibility Manual, December 1993.

Off-Site Traffic Noise Prediction Model Inputs

The City's General Plan Buildout Post-2030 average daily traffic volumes used for the off-site traffic-noise prediction model, as shown in Table 5.8-8, were provided by the Traffic Impact Analysis prepared by Urban Crossroads, Inc. for the 2012 Modified Project (see Appendix I of this DSSEIR, Table 6-2). Table 5.8-8 below provides the average daily traffic volumes used in the noise analysis for the 2011 Approved Project, and compares that baseline scenario to the 2012 Modified Project. As described in Chapter 3, *Project Description*, of this DSSEIR, 2012 Modified Project Option 1 includes Community Commercial and Multi-Use north of Trabuco Road with Residential south of Trabuco Road in District 1 South. The 2012 Modified Project Option 2, will include Residential north of Trabuco Road, with Community Commercial, Multi-Use, and Residential south of Trabuco Road in District 1 South.

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*Table 5.8-8
General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹*

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
1. Ada	s/o Barranca Pkwy.	Primary Highway Irvine	Irvine	2.2	2.8	2.8
2. Alicia Pkwy.	n/o Trabuco Rd.	Major Arterial	Mission Viejo	38.7	38.8	38.8
3. Alicia Pkwy.	s/o Trabuco Rd.	Major Arterial	Mission Viejo	42.8	43.0	43.0
4. Alicia Pkwy.	s/o Jeronimo Rd.	Major Arterial	Mission Viejo	59.3	59.7	59.7
5. Alicia Pkwy.	n/o Muirlands Bl.	Major Arterial	Mission Viejo	59.8	60.1	60.1
6. Alicia Pkwy.	b/w I-5 NB Ramps and Muirlands Bl.	Major Arterial	Mission Viejo	65.8	66.0	66.0
7. Alicia Pkwy.	s/o I-5 SB Ramps	Major Arterial	Laguna Hills	53.3	53.3	53.3
8. Alicia Pkwy.	s/o Paseo de Valencia	Major Arterial	Laguna Hills	46.0	45.9	45.8
9. Alicia Pkwy.	s/o Moulton Pkwy.	Major Arterial	Laguna Hills	44.6	44.5	44.5
10. Aliso Creek Rd.	e/o El Toro Rd.	Primary Arterial	Aliso Viejo	18.5	18.5	18.5
11. Alton Pkwy.	w/o Culver Dr.	Major Highway Irvine	Irvine	26.9	27.2	27.2
12. Alton Pkwy.	e/o Culver Dr.	Primary Highway Irvine	Irvine	28.9	29.3	29.3
13. Alton Pkwy.	e/o W. Yale Loop	Primary Highway Irvine	Irvine	27.9	28.2	28.2
14. Alton Pkwy.	e/o Lake Rd.	Primary Highway Irvine	Irvine	26.2	26.4	26.4
15. Alton Pkwy.	e/o Creek Rd.	Primary Highway Irvine	Irvine	25.3	25.4	25.4
16. Alton Pkwy.	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	30.2	30.3	30.3
17. Alton Pkwy.	b/w Jeffrey Rd. and Royal Oak	Primary Highway Irvine	Irvine	23.6	23.7	23.7
18. Alton Pkwy.	b/w Royal Oak and Valley Oak	Primary Highway Irvine	Irvine	21.1	21.2	21.1
19. Alton Pkwy.	w/o Sand Canyon Av.	Major Highway Irvine	Irvine	21.0	21.1	21.0
20. Alton Pkwy.	e/o Sand Canyon. Av.	Major Highway Irvine	Irvine	31.9	32.0	32.0

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
21. Alton Pkwy.	e/o Laguna Canyon Rd.	Primary Highway Irvine	Irvine	19.1	19.3	19.3
22. Alton Pkwy.	b/w Pacifica and Banting	Primary Highway Irvine	Irvine	20.1	20.4	20.4
23. Alton Pkwy.	w/o Meridian	Primary Highway Irvine	Irvine	17.7	17.8	17.8
24. Alton Pkwy.	b/w Meridian and ICD	Major Highway Irvine	Irvine	18.0	17.9	17.9
25. Alton Pkwy.	b/w Enterprise and Gateway Bl.	Major Highway Irvine	Irvine	37.2	37.5	37.4
26. Alton Pkwy.	b/w Enterprise and I-5 NB Ramps	Major Highway Irvine	Irvine	51.7	52.0	52.0
27. Alton Pkwy.	b/w I-5 NB Ramps and Technology Dr. W	Major Highway Irvine	Irvine	53.5	53.9	53.9
28. Alton Pkwy.	b/w Technology Dr. W and Ada	Major Highway Irvine	Irvine	39.8	40.7	40.7
29. Alton Pkwy.	e/o Ada	Major Highway Irvine	Irvine	35.3	35.5	35.5
30. Alton Pkwy.	w/o Marine Wy.	Major Highway Irvine	Irvine	36.7	37.3	37.4
31. Alton Pkwy.	e/o Technology	Major Highway Irvine	Irvine	36.9	37.3	37.4
32. Alton Pkwy.	s/o Barranca Pkwy./Muirlands Bl.	Major Highway Irvine	Irvine	35.9	37.3	37.3
33. Alton Pkwy.	n/o Barranca Pkwy./Muirlands Bl.	Major Highway Irvine	Irvine	42.7	41.9	42.0
34. Alton Pkwy.	s/o Jeronimo Rd.	Major Highway Irvine	Irvine	42.7	41.9	42.0
35. Alton Pkwy.	n/o Jeronimo Rd.	Major Highway Irvine	Irvine	39.0	38.2	38.2
36. Alton Pkwy.	s/o Toledo Wy.	Major Highway Irvine	Irvine	31.5	30.7	30.8
37. Alton Pkwy.	n/o Toledo Wy.	Major Highway Irvine	Irvine	31.4	30.1	30.1
38. Alton Pkwy.	s/o Irvine Bl. / Trabuco Rd.	Major Highway Irvine	Irvine	33.1	33.4	33.4
39. Alton Pkwy.	n/o Irvine Bl.	Major Highway Irvine	Irvine	40.0	40.9	40.9

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

Roadway	Segment	Classification ¹	Jurisdiction	2011 Approved Project (Baseline)	2012 Modified Project (Option1)	2012 Modified Project (Option2)
40. Alton Pkwy.	n/o Commercentre	Major Arterial	Lake Forest	53.0	53.2	53.2
41. Alton Pkwy.	s/o SR-241 Ramps	Primary Arterial	Lake Forest	31.0	30.9	30.9
42. Alton Pkwy.	n/o SR-241 Ramps	Major Arterial	Lake Forest	28.0	28.1	28.0
43. Avenida Carlota	w/o Ridge Route Dr.	Primary Arterial	Laguna Hills	10.2	10.1	10.1
44. Avenida Carlota	w/o Paseo de Valencia	Primary Arterial	Laguna Hills	17.3	17.3	17.3
45. Avenida Carlota	b/w Paseo de Valencia and El Toro Rd.	Primary Arterial	Laguna Hills	36.3	36.4	36.4
46. Avenida Carlota	e/o El Toro Rd.	Primary Arterial	Laguna Hills	23.4	23.5	23.5
47. Bake Pkwy.	s/o Portola Pkwy.	Primary Arterial	Lake Forest	20.0	20.0	20.0
48. Bake Pkwy.	n/o Commercentre Dr.	Primary Arterial	Lake Forest	33.0	33.1	33.1
49. Bake Pkwy.	n/o Irvine Bl.	Primary Arterial	Lake Forest	38.0	37.9	37.9
50. Bake Pkwy.	s/o Irvine Bl.	Major Highway Irvine	Irvine	48.7	48.4	48.4
51. Bake Pkwy.	b/w Toledo Wy. and Jeronimo Rd.	Major Highway Irvine	Irvine	56.2	56.4	56.4
52. Bake Pkwy.	n/o Muirlands Bl.	Major Highway Irvine	Irvine	62.4	62.5	62.5
53. Bake Pkwy.	s/o Muirlands Bl.	Transportation Corridor Irvine	Irvine	62.0	62.0	62.0
54. Bake Pkwy.	s/o Rockfield Bl.	Major Highway Irvine	Irvine	76.6	79.3	79.3
55. Bake Pkwy.	n/o I-5 NB Ramps	Major Highway Irvine	Irvine	83.2	83.2	83.1
56. Bake Pkwy.	b/w I-5 SB Ramps and Research Dr.	Major Highway Irvine	Irvine	35.5	36.0	35.8
57. Bake Pkwy.	b/w Research Dr. and ICD	Major Highway Irvine	Irvine	17.3	17.6	17.4
58. Bake Pkwy.	s/ICD	Major Highway Irvine	Irvine	16.3	16.3	16.3
59. Bake Pkwy.	b/w Lake Forest Dr. and Ridge Route Dr.	Major Highway Irvine	Irvine	3.4	3.4	3.4
60. Bake Pkwy.	b/w Ridge Route Dr. and Laguna Canyon	Major Highway Irvine	Irvine	10.7	10.8	10.8

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
61. Barranca Pkwy.	w/o Culver Dr.	Major Highway Irvine	Irvine	27.0	27.2	27.2
62. Barranca Pkwy.	e/o Culver Dr.	Primary Highway Irvine	Irvine	31.9	32.0	32.0
63. Barranca Pkwy.	e/o W. Yale Lp.	Primary Highway Irvine	Irvine	29.0	29.2	29.2
64. Barranca Pkwy.	e/o Lake Rd.	Primary Highway Irvine	Irvine	25.9	26.0	26.1
65. Barranca Pkwy.	b/w Creek Rd. and Lyon	Primary Highway Irvine	Irvine	24.7	24.9	24.9
66. Barranca Pkwy.	w/o E. Yale Lp.	Primary Highway Irvine	Irvine	24.4	24.9	24.9
67. Barranca Pkwy.	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	27.4	27.7	27.7
68. Barranca Pkwy.	e/o Jeffrey Rd.	Primary Highway Irvine	Irvine	17.7	17.9	18.0
69. Barranca Pkwy.	w/o Sand Canyon. Av.	Primary Highway Irvine	Irvine	18.0	18.1	18.1
70. Barranca Pkwy.	e/o Sand Canyon. Av.	Primary Highway Irvine	Irvine	15.6	15.6	15.6
71. Barranca Pkwy.	e/o Laguna Canyon Rd.	Primary Highway Irvine	Irvine	14.8	14.9	14.9
72. Barranca Pkwy.	b/w Discovery and Banting	Primary Highway Irvine	Irvine	13.1	13.3	13.3
73. Barranca Pkwy.	s/o ICD	Primary Highway Irvine	Irvine	17.9	18.4	18.4
74. Barranca Pkwy.	b/w I-5 HOV Ramp and ICD	Primary Highway Irvine	Irvine	20.4	21.0	21.0
75. Barranca Pkwy.	s/o Technology	Primary Highway Irvine	Irvine	21.8	22.4	22.4
76. Barranca Pkwy.	n/o Technology	Primary Highway Irvine	Irvine	23.0	24.1	24.1

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*Table 5.8-8
General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹*

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
77. Barranca Pkwy.	e/o Ada	Primary Highway Irvine	Irvine	20.4	21.8	21.8
78. Barranca Pkwy.	w/o Marine Wy.	Primary Highway Irvine	Irvine	24.4	25.7	25.7
79. Barranca Pkwy.	w/o Alton Pkwy.	Primary Highway Irvine	Irvine	21.8	20.7	20.7
80. Barranca Pkwy	e/o Alton Pkwy.	Primary Highway Irvine	Irvine	19.3	20.4	20.4
81. Barranca Pkwy	e/o Sterling	Primary Highway Irvine	Irvine	15.4	16.1	16.1
82. Bryan Av.	w/o Jamboree Rd.	Primary Arterial	Tustin	25.3	25.3	25.3
83. Bryan Av.	e/o Jamboree Rd.	Primary Highway Irvine	Irvine	19.7	20.0	19.9
84. Bryan Av.	w/o Culver Dr.	Primary Highway Irvine	Irvine	26.4	26.7	26.8
85. Bryan Av.	e/o Culver Dr.	Primary Highway Irvine	Irvine	19.3	19.7	19.7
86. Bryan Av.	e/o Eastwood	Primary Highway Irvine	Irvine	14.0	14.2	14.2
87. Canyon View Av.	w/o Jamboree Rd.	Primary Arterial	Orange	7.4	7.2	7.2
88. Chapman Ave.	w/o Jamboree Rd.	Major Arterial	Orange	26.7	28.3	28.2
89. Chapman Ave.	e/o Jamboree Rd.	Major Arterial	Orange	41.9	41.2	41.1
90. Creek Rd.	n/o Alton Pkwy.	Local Collector Irvine	Irvine	4.4	4.3	4.4
91. Culver Dr.	s/o Portola Pkwy.	Major Highway Irvine	Irvine	25.3	25.5	25.5
92. Culver Dr.	n/o Irvine Bl.	Major Highway Irvine	Irvine	28.3	28.4	28.4
93. Culver Dr.	s/o Irvine Bl.	Major Highway Irvine	Irvine	36.3	36.7	36.7
94. Culver Dr.	n/o Bryan Av.	Major Highway Irvine	Irvine	31.8	32.2	32.2
95. Culver Dr.	s/o Bryan Av.	Major Highway Irvine	Irvine	50.7	51.3	51.3
96. Culver Dr.	n/o Trabuco Rd.	Major Highway Irvine	Irvine	51.6	52.0	51.9

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
97. Culver Dr.	s/o I-5 SB Ramps	Major Highway Irvine	Irvine	56.7	57.0	56.9
98. Culver Dr.	n/o Walnut Av.	Major Highway Irvine	Irvine	51.4	51.8	51.8
99. Culver Dr.	b/w Walnut Av. and Deerfield Dr.	Major Highway Irvine	Irvine	47.6	47.8	47.8
100. Culver Dr.	b/w Deerfield Dr. and ICD	Major Highway Irvine	Irvine	42.5	42.9	42.9
101. Culver Dr.	b/w ICD and Warner Av.	Major Highway Irvine	Irvine	45.9	46.5	46.4
102. Culver Dr.	b/w Warner Av. and Barranca Pkwy.	Major Highway Irvine	Irvine	46.4	47.2	47.2
103. Culver Dr.	n/o Alton Pkwy.	Major Highway Irvine	Irvine	50.9	51.5	51.5
104. Culver Dr.	b/w Alton Pkwy. and Main St.	Major Highway Irvine	Irvine	51.7	52.1	52.1
105. Culver Dr.	b/w Main St. and San Leandro	Major Highway Irvine	Irvine	52.4	52.6	52.6
106. Culver Dr.	b/w San Leandro and I-405 NB Ramps	Major Highway Irvine	Irvine	58.5	58.7	58.7
107. E. Yale Lp.	s/o Barranca Pkwy.	Secondary Arterial Irvine	Irvine	12.2	12.2	12.2
108. E. Yale Lp.	n/o Alton Pkwy.	Primary Highway Irvine	Irvine	11.6	11.6	11.6
109. E. Yale Lp.	s/o Alton Pkwy.	Primary Highway Irvine	Irvine	11.5	11.5	11.5
110. El Camino Real	e/o Tustin Ranch Rd.	Primary Arterial	Tustin	16.5	16.6	16.6
111. El Camino Real	e/o Jamboree Rd.	Primary Highway Irvine	Irvine	24.3	24.4	24.4
112. El Camino Real N.	s/o Bryan Ave.	Primary Highway Irvine	Irvine	7.8	7.8	7.8
113. El Toro Rd.	n/o Portola Pkwy./S. Margarita Pkwy.	Major Arterial	Lake Forest	20.0	20.0	20.0
114. El Toro Rd.	s/o Portola Pkwy./S. Margarita Pkwy.	Major Arterial	Lake Forest	43.0	42.9	42.9

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

Roadway	Segment	Classification ¹	Jurisdiction	2011 Approved Project (Baseline)	2012 Modified Project (Option1)	2012 Modified Project (Option2)
115. El Toro Rd.	n/o Trabuco Rd.	Major Arterial	Lake Forest	22.0	22.0	22.0
116. El Toro Rd.	n/o Toledo Wy.	Principal	Lake Forest	44.0	43.7	43.8
117. El Toro Rd.	n/o Jeronimo Rd.	Principal	Lake Forest	44.0	44.0	44.1
118. El Toro Rd.	s/o Jeronimo Rd.	Principal	Lake Forest	46.0	46.0	46.0
119. El Toro Rd.	n/o Rockfield Bl.	Principal	Lake Forest	50.0	50.0	50.0
120. El Toro Rd.	b/w Rockfield Bl. and I-5 NB Ramps	Principal	Lake Forest	65.0	65.0	65.0
121. El Toro Rd.	b/w I-5 SB Ramps and Avenida Carlota	Major Arterial	Laguna Hills	44.8	44.7	44.7
122. El Toro Rd.	n/o Paseo de Valencia	Major Arterial	Laguna Hills	29.6	29.6	29.6
123. El Toro Rd.	s/o Paseo de Valencia	Major Arterial	Laguna Woods	32.9	33.0	33.0
124. El Toro Rd.	s/o Moulton Pkwy.	Major Arterial	Laguna Woods	32.4	32.2	32.2
125. El Toro Rd.	n/o Aliso Creek Rd.	Major Arterial	Laguna Woods	26.4	26.5	26.6
126. El Toro Rd.	n/o SR-73	Major Arterial	Aliso Viejo	29.9	30.1	30.1
127. El Toro Rd.	s/o SR-73	Primary Arterial	Orange County	17.8	17.8	17.8
128. Fortune Dr.	b/w Gateway Bl. and Spectrum	Primary Highway Irvine	Irvine	8.7	8.7	8.7
129. Fortune Dr.	b/w Pacifica and Spectrum	Primary Highway Irvine	Irvine	8.9	8.9	8.9
130. Gateway Bl.	w/o Fortune Dr.	Primary Highway Irvine	Irvine	7.1	7.2	7.1
131. Gateway Bl.	n/o Alton Pkwy.	Primary Highway Irvine	Irvine	1.7	1.7	1.7
132. Gateway Bl.	w/o ICD	Primary Highway Irvine	Irvine	2.7	2.8	2.8
133. Glenn Ranch Rd.	n/o Portola Pkwy.	Primary Arterial	Lake Forest	29.0	28.9	29.0
134. Glenwood Dr.	w/o Moulton Pkwy.	Primary Arterial	Aliso Viejo	11.7	11.7	11.7
135. Handy Creek Rd.	e/o Jamboree Rd.	Collector	Tustin	2.2	2.1	2.1

5. Environmental Analysis

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
136. Harvard Av.	s/o Walnut Av.	Local Collector Irvine	Irvine	11.7	11.5	11.5
137. Harvard Av.	n/o Edinger Av.	Primary Highway Irvine	Irvine	13.2	13.1	13.1
138. Harvard Av.	b/w Edinger Av. And Paseo Westpark	Primary Highway Irvine	Irvine	15.2	15.3	15.3
139. Hubble	n/o ICD	Primary Highway Irvine	Irvine	2.0	2.0	2.0
140. Irvine Bl.	b/w Newport and Red Hill	Major Arterial	Tustin	54.7	55.5	55.5
141. Irvine Bl.	b/w Red Hill and Browning	Primary Arterial	Tustin	53.4	54.1	54.1
142. Irvine Bl.	w/o Tustin Ranch Rd.	Major Arterial	Tustin	47.8	48.2	48.3
143. Irvine Bl.	w/o Jamboree Rd.	Major Arterial	Tustin	41.9	42.2	42.2
144. Irvine Bl.	e/o Jamboree Rd.	Major Highway Irvine	Irvine	45.0	45.4	45.4
145. Irvine Bl.	b/w SR-261 Ramps	Major Highway Irvine	Irvine	43.8	44.3	44.2
146. Irvine Bl.	e/o SR-261 NB Ramps	Major Highway Irvine	Irvine	45.0	45.6	45.5
147. Irvine Bl.	w/o Culver Dr.	Major Highway Irvine	Irvine	38.4	39.0	38.9
148. Irvine Bl.	e/o Culver Dr.	Major Highway Irvine	Irvine	38.8	39.5	39.4
149. Irvine Bl.	e/o Yale Av.	Major Highway Irvine	Irvine	42.4	42.8	42.8
150. Irvine Bl.	w/o Jeffrey Rd.	Major Highway Irvine	Irvine	37.5	37.7	37.7
151. Irvine Bl.	e/o Jeffrey Rd.	Major Highway Irvine	Irvine	36.3	36.6	36.6
152. Irvine Bl.	e/o Groveland	Major Highway Irvine	Irvine	36.5	36.9	36.8
153. Irvine Bl.	e/o Sand Canyon. Av.	Major Highway Irvine	Irvine	38.9	39.5	39.4
154. Irvine Bl.	e/o SR-133 NB Ramps	Major Highway Irvine	Irvine	42.5	43.3	43.1
155. Irvine Bl.	w/o O St.	Major Highway Irvine	Irvine	36.5	37.4	37.2
156. Irvine Bl.	e/o O St.	Major Highway Irvine	Irvine	39.2	40.0	40.0
157. Irvine Bl.	w/o A St.	Major Highway Irvine	Irvine	39.6	40.4	40.5

5. Environmental Analysis

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*Table 5.8-8
General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹*

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
158. Irvine Bl.	w/o Z St.	Major Highway Irvine	Irvine	45.3	46.4	46.4
159. Irvine Bl.	e/o Z St.	Major Highway Irvine	Irvine	47.0	48.0	48.0
160. Irvine Bl.	w/o LQ St.	Major Highway Irvine	Irvine	46.7	45.6	45.6
161. Irvine Bl.	e/o LQ St.	Major Highway Irvine	Irvine	52.5	49.4	49.4
162. Irvine Bl.	w/o Alton Pkwy.	Major Highway Irvine	Irvine	54.8	51.8	51.8
163. Irvine Bl.	e/o Alton Pkwy.	Major Highway Irvine	Irvine	43.9	42.4	42.4
164. ICD/Edinger Av.	w/o Jamboree	Major Arterial	Tustin	26.8	27.2	27.2
165. ICD/Edinger Av.	e/o Jamboree	Major Arterial	Tustin	30.2	30.3	30.3
166. ICD	e/o Hearthstone Bl.	Major Highway Irvine	Irvine	25.7	26.0	26.0
167. ICD	e/o Culver Dr.	Major Highway Irvine	Irvine	26.9	26.9	26.9
168. ICD	b/w Yale Av. And Fontaine Av.	Major Highway Irvine	Irvine	28.8	28.8	28.8
169. ICD	e/o Jeffrey Rd.	Major Highway Irvine	Irvine	41.6	41.5	41.5
170. ICD	w/o Sand Canyon. Av.	Major Highway Irvine	Irvine	25.7	26.1	26.1
171. ICD	e/o Sand Canyon Av.	Major Highway Irvine	Irvine	19.4	19.5	19.5
172. ICD	b/w Laguna Canyon Rd. and Discovery	Major Highway Irvine	Irvine	17.7	17.9	17.9
173. ICD	w/o Barranca Pkwy.	Major Highway Irvine	Irvine	22.1	22.2	22.2
174. ICD	b/w Barranca Pkwy. and Gateway Bl.	Major Highway Irvine	Irvine	23.5	23.6	23.6
175. ICD	b/w Gateway Bl. and Alton Pkwy.	Major Highway Irvine	Irvine	20.9	20.9	20.9
176. ICD	b/w Alton Pkwy. and Spectrum	Major Highway Irvine	Irvine	34.7	34.9	34.8
177. ICD	b/w Pacifica and Enterprise Dr.	Major Highway Irvine	Irvine	35.1	35.1	35.0
178. ICD	b/w Enterprise and I-405 SB Ramps	Major Highway Irvine	Irvine	52.9	52.9	52.8

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*Table 5.8-8
General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹*

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
179. ICD	b/w I-405 SB Ramps and Research Dr.	Transportation Corridor Irvine	Irvine	13.3	13.4	13.4
180. ICD	b/w Research Dr. and Hubble	Major Highway Irvine	Irvine	23.8	23.8	23.8
181. ICD	b/w Hubble and Bake Pkwy.	Major Highway Irvine	Irvine	22.3	22.3	22.3
182. ICD	b/w Bake Pkwy. and Muller	Major Highway Irvine	Irvine	21.3	21.2	21.2
183. ICD	b/w Muller and Tesla	Major Highway Irvine	Irvine	20.6	20.6	20.6
184. ICD	w/o Lake Forest Dr.	Major Highway Irvine	Irvine	20.1	20.1	20.1
185. Jamboree Rd.	n/o Chapman/Santiago Cyn.	Major Arterial	Orange	20.4	21.2	21.3
186. Jamboree Rd.	s/o Chapman Av.	Major Arterial	Orange	14.1	15.2	15.3
187. Jamboree Rd.	s/o Canyon View Av.	Major Arterial	Orange	24.2	25.4	25.4
188. Jamboree Rd.	n/o Tustin Ranch Rd.	Major Arterial	Tustin	26.4	27.3	27.3
189. Jamboree Rd.	s/o Tustin Ranch Rd.	Major Arterial	Tustin	26.0	27.4	27.4
190. Jamboree Rd.	n/o Irvine Bl.	Major Arterial	Tustin	26.9	27.5	27.6
191. Jamboree Rd.	s/o Irvine Bl.	Transportation Corridor Irvine	Irvine	37.5	37.5	37.5
192. Jamboree Rd.	s/o Bryan Av.	Transportation Corridor Irvine	Irvine	39.2	39.2	39.2
193. Jamboree Rd.	b/w El Camino Real and I-5 NB Ramps	Transportation Corridor Irvine	Irvine	61.5	61.5	61.5
194. Jamboree Rd.	n/o Michelle Dr.	Transportation Corridor Irvine	Irvine	59.5	60.4	60.4
195. Jamboree Rd.	s/o Michelle Dr.	Major Highway Irvine	Irvine	58.7	58.6	58.6
196. Jamboree Rd.	n/o Edinger Av.	Transportation Corridor Irvine	Irvine	96.9	97.9	97.9
197. Jamboree Rd.	s/o Edinger Av.	Transportation Corridor Irvine	Irvine	85.6	86.6	86.6

5. Environmental Analysis

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*Table 5.8-8
General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹*

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
198. Jeffrey Rd.	e/o SR-241 NB Ramps	Primary Highway Irvine	Irvine	4.1	3.9	3.9
199. Jeffrey Rd.	n/o Portola Pkwy.	Primary Highway Irvine	Irvine	10.9	10.9	11.0
200. Jeffrey Rd.	n/o Irvine Bl.	Major Highway Irvine	Irvine	33.7	34.1	34.0
201. Jeffrey Rd.	n/o Bryan Av.	Major Highway Irvine	Irvine	35.2	36.0	35.9
202. Jeffrey Rd.	n/o Trabuco Rd.	Major Highway Irvine	Irvine	46.5	47.0	47.0
203. Jeffrey Rd.	s/o Trabuco Rd.	Major Highway Irvine	Irvine	50.9	51.6	51.6
204. Jeffrey Rd.	b/w Roosevelt and I-5 NB Ramps	Major Highway Irvine	Irvine	68.5	69.7	69.7
205. Jeffrey Rd.	s/o Walnut Av./I-5 SB Ramps	Major Highway Irvine	Irvine	50.5	50.3	50.3
206. Jeffrey Rd.	s/o Irvine Center Drive	Major Highway Irvine	Irvine	49.5	49.6	49.5
207. Jeffrey Rd.	n/o Alton Pkwy.	Major Highway Irvine	Irvine	47.7	47.9	47.8
208. Jeffrey Rd.	b/w Quailcreek and I-405 NB Ramps	Major Highway Irvine	Irvine	57.5	57.8	57.9
209. Jeronimo Rd.	e/o Alton Pkwy.	Primary Highway Irvine	Irvine	7.3	7.3	7.3
210. Jeronimo Rd.	w/o Lake Forest Dr.	Primary Arterial	Lake Forest	12.0	12.0	11.9
211. Jeronimo Rd.	e/o Lake Forest Dr.	Primary Arterial	Lake Forest	17.0	16.9	16.9
212. Jeronimo Rd.	e/o Ridge Route Dr.	Primary Arterial	Lake Forest	15.0	14.9	15.0
213. Jeronimo Rd.	w/o Los Alisos Bl.	Primary Arterial	Lake Forest	28.0	27.8	27.8
214. Jeronimo Rd.	e/o Los Alisos Bl.	Primary Arterial	Mission Viejo	23.8	23.6	23.6
215. Jeronimo Rd.	s/o Alicia Pkwy.	Primary Arterial	Mission Viejo	25.6	25.4	25.4
216. Laguna Canyon Rd.	b/w ICD and Discovery	Primary Highway Irvine	Irvine	6.8	6.8	6.8
217. Laguna Canyon Rd.	b/w Waterworks Wy. and ICD	Primary Highway Irvine	Irvine	6.8	6.9	6.9

5. Environmental Analysis

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
218. Laguna Canyon Rd.	n/o Alton Pkwy.	Primary Highway Irvine	Irvine	6.1	6.1	6.1
219. Laguna Canyon Rd.	s/o Alton Pkwy.	Primary Highway Irvine	Irvine	9.5	9.6	9.5
220. Laguna Canyon Rd.	n/o Quail Hill Pkwy.	Primary Highway Irvine	Irvine	7.6	7.7	7.6
221. Laguna Canyon Rd.	s/o Quail Hill Pkwy.	Primary Highway Irvine	Irvine	12.0	12.1	12.0
222. Laguna Canyon Rd.	n/o SR-73 NB Ramps	Primary Highway Irvine	Irvine	34.3	34.4	34.4
223. Laguna Hills Dr.	s/o Paseo de Valencia	Primary Arterial	Laguna Hills	24.1	24.1	24.2
224. Laguna Hills Dr.	w/o Moulton Pkwy.	Major Arterial	Aliso Viejo	30.7	30.6	30.7
225. Lake Rd.	n/o Alton Pkwy.	Local Collector Irvine	Irvine	5.8	5.8	5.8
226. Lake Forest Dr.	s/o Portola Pkwy.	Primary Arterial	Lake Forest	18.0	18.0	18.0
227. Lake Forest Dr.	s/o SR-241 SB Ramps	Primary Arterial	Lake Forest	28.0	27.6	27.5
228. Lake Forest Dr.	s/o Rancho Pkwy.	Primary Arterial	Lake Forest	36.0	36.4	36.4
229. Lake Forest Dr.	n/o Trabuco Rd.	Primary Arterial	Lake Forest	35.8	36.1	36.1
230. Lake Forest Dr.	s/o Trabuco Rd.	Major Arterial	Lake Forest	41.0	41.1	41.0
231. Lake Forest Dr.	n/o Jeronimo Rd.	Major Arterial	Lake Forest	39.0	39.6	39.5
232. Lake Forest Dr.	s/o Jeronimo Rd.	Major Arterial	Lake Forest	40.0	40.4	40.4
233. Lake Forest Dr.	n/o Muirlands Bl.	Major Arterial	Lake Forest	31.0	31.3	31.3
234. Lake Forest Dr.	n/o Rockfield Bl.	Major Arterial	Lake Forest	47.0	47.4	47.4
235. Lake Forest Dr.	b/w Rockfield Bl. and I-5 NB Ramps	Major Arterial	Lake Forest	76.0	76.5	76.5
236. Lake Forest Dr.	s/o Avenida Carlota/I-5 SB Ramps	Major Highway Irvine	Irvine	22.7	22.9	22.9
237. Lake Forest Dr.	s/o ICD	Major Highway Irvine	Irvine	12.5	12.7	12.7

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
238. Lake Forest Dr.	b/w Scientific Way and Tesla	Major Highway Irvine	Irvine	21.6	21.9	21.8
239. Lake Forest Dr.	e/o Bake Pkwy.	Major Highway Irvine	Irvine	23.5	23.8	23.7
240. Lake Forest Dr.	w/o Bake Pkwy.	Primary Highway Irvine	Irvine	22.3	22.5	22.4
241. Los Alisos Bl.	n/o Trabuco Rd.	Primary Arterial	Mission Viejo	22.6	22.6	22.6
242. Los Alisos Bl.	s/o Trabuco Rd.	Major Arterial	Mission Viejo	28.1	28.1	28.1
243. Los Alisos Bl.	e/o Muirlands Bl.	Major Arterial	Lake Forest	41.0	41.2	41.2
244. Los Alisos Bl.	w/o Muirlands Bl.	Primary Arterial	Lake Forest	36.0	36.3	36.2
245. Los Alisos Bl.	s/o Rockfield Bl./Fordview St.	Major Arterial	Lake Forest	31.0	31.0	31.0
246. Los Alisos Bl.	b/w Avenida Carlota and Paseo de Valencia	Major Arterial	Laguna Hills	25.1	25.1	25.1
247. Marine Wy.	w/o O St.	Primary Highway Irvine	Irvine	21.0	24.2	24.2
248. Marine Wy.	e/o O St.	Primary Highway Irvine	Irvine	23.8	26.8	26.8
249. Marine Wy.	w/o D St.	Primary Highway Irvine	Irvine	23.1	26.2	26.2
250. Marine Wy.	e/o D St.	Primary Highway Irvine	Irvine	20.2	23.6	23.6
251. Marine Wy	w/o Great Park Blvd East	Primary Highway Irvine	Irvine	20.5	23.9	23.9
252. Marine Wy	w/o B St	Primary Highway Irvine	Irvine	20.4	27.1	27.1
253. Marine Wy	e/o B St	Primary Highway Irvine	Irvine	19.5	20.4	20.4
254. Marine Wy.	n/o Barranca Pkwy.	Primary Highway Irvine	Irvine	22.3	21.4	21.5
255. Marine Wy.	s/o Barranca Pkwy.	Primary Highway Irvine	Irvine	14.4	13.7	13.7

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
256. Marine Wy.	n/o Rockfield Bl.	Primary Highway Irvine	Irvine	26.5	23.2	23.2
257. Marine Wy.	s/o Rockfield Bl.	Primary Highway Irvine	Irvine	20.8	23.9	23.9
258. Meridian	n/o Alton Pkwy.	Primary Highway Irvine	Irvine	1.0	1.0	1.0
259. Modjeska	n/o Irvine Bl.	Local Collector Irvine	Irvine	13.9	14.0	14.0
260. Moulton Pkwy.	e/o (s/o) Lake Forest	Major Arterial	Laguna Hills	31.5	31.5	31.4
261. Moulton Pkwy.	e/o (s/o) Ridge Route	Major Arterial	Laguna Hills	38.9	38.8	38.8
262. Moulton Pkwy.	w/o (n/o) El Toro Rd.	Major Arterial	Laguna Woods	44.1	43.9	43.9
263. Moulton Pkwy.	e/o (s/o) El Toro Rd.	Major Arterial	Laguna Woods	44.8	44.8	44.8
264. Moulton Pkwy.	b/w Glenwood/Indian Creek and Laguna Hills Dr.	Major Arterial	Aliso Viejo	41.3	41.4	41.4
265. Moulton Pkwy.	s/o Laguna Hills Dr.	Major Arterial	Aliso Viejo	30.2	30.3	30.3
266. Moulton Pkwy.	s/o Alicia Pkwy.	Major Arterial	Laguna Hills	26.2	26.1	26.1
267. Muirlands Bl.	w/o Bake Pkwy.	Primary Highway Irvine	Irvine	16.6	16.6	16.6
268. Muirlands Bl.	e/o Bake Pkwy.	Primary Arterial	Lake Forest	20.0	19.7	19.7
269. Muirlands Bl.	w/o Ridge Route Dr.	Primary Arterial	Lake Forest	27.0	26.8	26.7
270. Muirlands Bl.	e/o Ridge Route Dr.	Primary Arterial	Lake Forest	27.0	26.8	26.8
271. Muirlands Bl.	e/o El Toro Rd.	Primary Arterial	Lake Forest	29.0	28.8	28.8
272. Muirlands Bl.	s/o Los Alisos Bl.	Primary Arterial	Mission Viejo	24.4	24.2	24.2
273. Muirlands Bl.	e/o Alicia Pkwy.	Primary Arterial	Mission Viejo	19.9	19.9	19.9
274. Oak Cyn.	w/o Sand Canyon. Av.	Local Collector Irvine	Irvine	6.4	6.4	6.4
275. Orchard Hills	n/o Portola Pkwy.	Local Collector Irvine	Irvine	6.9	6.9	6.9
276. Pacifica	w/o Fortune Dr.	Primary Highway Irvine	Irvine	10.8	10.7	10.6

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*Table 5.8-8
General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹*

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
277. Pacifica	w/o (n/o) Alton Pkwy.	Primary Highway Irvine	Irvine	7.4	7.2	7.2
278. Paseo de Valencia	e/o El Toro Rd.	Primary Arterial	Laguna Hills	36.4	36.3	36.3
279. Paseo de Valencia	w/o Los Alisos Bl.	Major Arterial	Laguna Hills	31.0	30.9	30.9
280. Paseo de Valencia	e/o Los Alisos Bl.	Major Arterial	Laguna Hills	47.0	46.9	46.9
281. Paseo de Valencia	w/o Alicia Pkwy.	Major Arterial	Laguna Hills	36.1	36.4	36.4
282. Paseo de Valencia	e/o Alicia Pkwy.	Primary Arterial	Laguna Hills	14.0	14.0	14.0
283. Portola Pkwy.	w/o Jamboree Rd.	Primary Arterial	Tustin	15.5	15.8	15.8
284. Portola Pkwy.	w/o SR-261 SB Ramps	Major Highway Irvine	Irvine	25.8	26.4	26.5
285. Portola Pkwy.	e/o SR-261 NB Ramps	Major Highway Irvine	Irvine	21.4	21.9	21.9
286. Portola Pkwy.	e/o Culver Dr.	Major Highway Irvine	Irvine	22.8	23.2	23.3
287. Portola Pkwy.	w/o Jeffrey Rd.	Major Highway Irvine	Irvine	26.0	26.0	26.0
288. Portola Pkwy.	w/o Sand Canyon. Av.	Primary Highway Irvine	Irvine	27.6	27.7	27.7
289. Portola Pkwy.	e/o Sand Canyon. Av.	Primary Highway Irvine	Irvine	23.1	23.3	23.2
290. Portola Pkwy.	w/o Ridge Valley	Primary Highway Irvine	Irvine	24.4	24.6	24.5
291. Portola Pkwy.	e/o Ridge Valley	Primary Highway Irvine	Irvine	25.4	25.4	25.4
292. Portola Pkwy.	b/w Silverado and Portola Springs	Primary Highway Irvine	Irvine	27.2	27.2	27.1
293. Portola Pkwy.	e/o Portola Springs	Primary Highway Irvine	Irvine	22.9	23.5	23.5
294. Portola Pkwy.	w/o Alton Pkwy.	Primary Arterial	Lake Forest	5.0	4.6	4.6
295. Portola Pkwy.	e/o Alton Pkwy.	Major Arterial	Lake Forest	22.0	22.0	21.9
296. Portola Pkwy.	w/o Lake Forest Dr.	Major Arterial	Lake Forest	32.0	31.7	31.7
297. Portola Pkwy.	w/o Glenn Ranch Rd.	Major Arterial	Lake Forest	50.0	49.6	49.5

5. Environmental Analysis

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
298. Portola Pkwy.	e/o Glenn Ranch Rd.	Major Arterial	Lake Forest	35.0	34.5	34.6
299. Portola Pkwy. East	s/o SR-241 SB Ramps	Major Arterial	Lake Forest	35.0	34.8	34.7
300. Portola Pkwy.	s/o Rancho Pkwy.	Major Arterial	Lake Forest	60.0	59.8	59.7
301. Portola Pkwy.	e/o El Toro Rd.	Major Arterial	Mission Viejo	50.3	50.0	50.0
302. Portola Springs	s/o Portola Pkwy.	Primary Highway Irvine	Irvine	6.6	6.4	6.4
303. Quail Hill Pkwy.	e/o Shady Canyon Dr.	Primary Highway Irvine	Irvine	19.5	19.6	19.6
304. Rancho Pkwy. S	w/o Bake Pkwy.	Primary Arterial	Lake Forest	10.0	10.2	10.2
305. Rancho Pkwy.	w/o Lake Forest Dr.	Primary Arterial	Lake Forest	30.0	29.6	29.6
306. Rancho Pkwy.	e/o Lake Forest Dr.	Primary Arterial	Lake Forest	20.0	20.0	20.0
307. Research Dr.	e/o ICD	Primary Highway Irvine	Irvine	9.0	8.9	8.9
308. Research Dr.	w/o (n/o) Bake Pkwy.	Primary Highway Irvine	Irvine	11.9	11.8	11.8
309. Research Dr.	n/o Lake Forest Dr.	Primary Highway Irvine	Irvine	12.2	12.1	12.1
310. Ridge Route Dr.	s/o Trabuco Rd.	Primary Arterial	Lake Forest	9.0	9.0	9.0
311. Ridge Route Dr.	n/o Jeronimo Rd.	Primary Arterial	Lake Forest	7.0	7.1	7.1
312. Ridge Route Dr.	s/o Jeronimo Rd.	Primary Arterial	Lake Forest	10.0	10.1	10.1
313. Ridge Route Dr.	s/o Muirlands Bl.	Primary Arterial	Lake Forest	8.0	8.1	8.0
314. Ridge Route Dr.	s/o Rockfield B.	Primary Arterial	Lake Forest	18.1	18.0	18.0
315. Ridge Route Dr.	s/o (w/o) Avenida Carlota	Primary Arterial	Laguna Hills	14.9	14.9	14.9
316. Ridge Route Dr.	s/o (w/o) Moulton Pkwy.	Primary Arterial	Laguna Hills	11.0	11.0	11.1
317. Ridge Route Dr.	e/o Bake Pkwy.	Primary Arterial	Laguna Hills	9.4	9.5	9.5
318. Ridge Valley	s/o Portola Pkwy.	Primary Highway Irvine	Irvine	10.0	9.8	9.8

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*Table 5.8-8
General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹*

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
319. Rockfield Bl.	e/o Marine Wy	Primary Highway Irvine	Irvine	6.4	n/a	n/a
320. Rockfield Bl.	e/o Sterling	Primary Highway Irvine	Irvine	5.4	n/a	n/a
321. Rockfield Bl.	w/o Bake Pkwy.	Primary Highway Irvine	Irvine	10.6	7.6	7.6
322. Rockfield Bl.	w/o Lake Forest Dr.	Primary Highway Irvine	Irvine	15.7	15.6	15.6
323. Rockfield Bl.	w/o Ridge Route Dr.	Primary Arterial	Lake Forest	24.0	24.0	23.9
324. Rockfield Bl.	e/o Ridge Route Dr.	Primary Arterial	Lake Forest	24.0	24.1	24.0
325. Rockfield Bl.	e/o El Toro Rd.	Primary Arterial	Lake Forest	20.0	20.0	20.0
326. Roosevelt	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	10.3	10.2	10.3
327. Roosevelt	e/o Jeffrey Rd.	Primary Highway Irvine	Irvine	20.4	20.8	20.8
328. Roosevelt	w/o Sand Canyon Av.	Primary Highway Irvine	Irvine	8.6	8.6	8.6
329. Sand Canyon. Av.	n/o Irvine Bl.	Primary Highway Irvine	Irvine	27.1	26.7	26.8
330. Sand Canyon. Av.	s/o Irvine Bl.	Major Highway Irvine	Irvine	32.2	31.8	31.9
331. Sand Canyon. Av.	n/o Trabuco Rd.	Major Highway Irvine	Irvine	28.1	27.9	28.0
332. Sand Canyon. Av.	s/o Trabuco Rd.	Transportation Corridor Irvine	Irvine	50.4	50.2	50.2
333. Sand Canyon. Av.	s/o Roosevelt	Transportation Corridor Irvine	Irvine	53.3	53.0	53.0
334. Sand Canyon. Av.	n/o I-5 NB Ramps	Transportation Corridor Irvine	Irvine	62.6	62.0	62.0
335. Sand Canyon. Av.	b/w I-5 SB Ramps and Burt Rd.	Major Highway Irvine	Irvine	52.5	52.9	52.9
336. Sand Canyon. Av.	b/w Burt Rd. and Oak Cyn./Laguna Cyn. Rd.	Major Highway Irvine	Irvine	53.5	53.8	53.8

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*Table 5.8-8
General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹*

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
337. Sand Canyon. Av.	n/o ICD	Major Highway Irvine	Irvine	42.8	43.2	43.2
338. Sand Canyon. Av.	s/o Waterworks Wy.	Major Highway Irvine	Irvine	38.8	38.9	38.9
339. Sand Canyon. Av.	s/o Barranca Pkwy.	Major Highway Irvine	Irvine	39.1	39.3	39.3
340. Sand Canyon. Av.	b/w Alton Pkwy. and I-405 NB Ramps	Major Highway Irvine	Irvine	41.3	41.5	41.5
341. Santa Maria Av.	s/o Moulton Pkwy.	Primary Arterial	Laguna Woods	8.9	8.9	8.9
342. Santa Maria Av.	e/o Laguna Canyon Rd.	Secondary	Laguna Woods	6.0	6.0	6.0
343. Santiago Canyon Rd.	e/o SR-241 NB Ramp	Primary Arterial	Orange	23.2	23.6	23.6
344. Scientific Wy.	s/o ICD	Primary Highway Irvine	Irvine	1.7	1.7	1.7
345. Spectrum	w/o Fortune Dr.	Local Collector Irvine	Irvine	2.9	2.9	3.0
346. Sterling	b/w Rockfield Bl and Barranca Pkwy	Local Collector Irvine	Irvine	3.8	n/a	n/a
347. Technology Dr.	e/o Barranca Pkwy.	Primary Highway Irvine	Irvine	20.7	20.8	20.8
348. Technology Dr.	w/o Barranca Pkwy.	Primary Highway Irvine	Irvine	15.8	16.0	16.1
349. Technology Dr.	e/o Laguna Canyon Rd.	Secondary Arterial Irvine	Irvine	17.2	17.1	17.1
350. Toledo Wy.	e/o Alton Pkwy.	Primary Highway Irvine	Irvine	4.7	6.3	6.3
351. Toledo Wy.	w/o Lake Forest Dr.	Primary Arterial	Lake Forest	6.0	6.2	6.2
352. Toledo Wy.	w/o Ridge Route Dr.	Secondary	Lake Forest	7.0	7.0	6.9
353. Toledo Wy.	e/o Ridge Route Dr.	Primary Arterial	Lake Forest	8.0	8.0	8.0
354. Trabuco Rd.	b/w Culver Dr. and I-5 NB Ramps	Primary Highway Irvine	Irvine	38.4	38.5	38.7
355. Trabuco Rd.	e/o I-5 NB Ramps	Primary Highway Irvine	Irvine	21.4	21.8	21.8

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

Roadway	Segment	Classification ¹	Jurisdiction	2011 Approved Project (Baseline)	2012 Modified Project (Option1)	2012 Modified Project (Option2)
356. Trabuco Rd.	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	18.9	19.3	19.3
357. Trabuco Rd.	e/o Jeffrey Rd.	Primary Highway Irvine	Irvine	19.2	19.4	19.5
358. Trabuco Rd.	e/o Sand Canyon	Primary Highway Irvine	Irvine	25.7	25.4	25.5
359. Trabuco Rd.	e/o Bake Pkwy.	Major Arterial	Lake Forest	28.0	27.9	27.9
360. Trabuco Rd.	b/w Lake Forest Dr. and Ridge Route Dr.	Major Arterial	Lake Forest	36.0	35.7	35.7
361. Trabuco Rd.	w/o El Toro Rd.	Major Arterial	Lake Forest	40.0	39.9	39.9
362. Trabuco Rd.	e/o El Toro Rd.	Primary Arterial	Lake Forest	23.7	23.6	23.6
363. Trabuco Rd.	n/o Alicia Pkwy.	Primary Arterial	Mission Viejo	26.5	26.4	26.4
364. Trabuco Rd.	s/o Alicia Pkwy.	Primary Arterial	Mission Viejo	13.8	13.7	13.7
365. Tustin Ranch Rd.	w/o Jamboree	Major Arterial	Tustin	12.0	11.7	11.7
366. Tustin Ranch Rd.	s/o Portola Pkwy.	Major Arterial	Tustin	31.4	31.4	31.4
367. Tustin Ranch Rd.	n/o La Colina Dr.	Major Arterial	Tustin	31.4	31.3	31.3
368. Tustin Ranch Rd.	s/o Irvine Bl.	Major Arterial	Tustin	28.2	27.9	27.9
369. University Dr.	b/w I-405 SB Ramps and Michelson Dr.	Major Highway Irvine	Irvine	59.7	60.0	60.1
370. Walnut Av.	w/o Jamboree	Major Highway Irvine	Irvine	22.0	22.3	22.2
371. Walnut Av.	e/o Jamboree	Major Highway Irvine	Irvine	23.4	23.5	23.5
372. Walnut Av.	w/o Culver Dr.	Primary Highway Irvine	Irvine	25.9	26.2	26.2
373. Walnut Av.	e/o Culver Dr.	Primary Highway Irvine	Irvine	25.6	25.9	25.9
374. Walnut Av.	e/o Yale Av.	Primary Highway Irvine	Irvine	13.0	13.0	13.0
375. Walnut Av.	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	19.6	19.5	19.5

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
376. Warner Av.	w/o Paseo Westpark	Primary Highway Irvine	Irvine	10.8	10.9	10.9
377. Warner Av.	w/o Culver Dr.	Primary Highway Irvine	Irvine	10.4	10.4	10.4
378. Warner Av.	b/w Culver Dr. and W. Yale Loop	Primary Highway Irvine	Irvine	11.1	11.2	11.2
379. W. Yale Loop	s/o Barranca Pkwy.	Primary Highway Irvine	Irvine	6.4	6.5	6.5
380. W. Yale Loop	s/o Alton Pkwy.	Primary Highway Irvine	Irvine	12.3	12.3	12.3
381. Yale Av.	b/w Portola and Arborwood	Local Collector Irvine	Irvine	6.1	6.0	6.0
382. Yale Av.	b/w Park Pl. and Irvine Bl.	Primary Highway Irvine	Irvine	11.8	11.7	11.7
383. Yale Av.	n/o Bryan Av.	Primary Highway Irvine	Irvine	8.5	8.6	8.6
384. Yale Av.	n/o Trabuco Rd.	Primary Highway Irvine	Irvine	9.9	10.0	10.0
385. Yale Av.	n/o Walnut Av.	Secondary Arterial Irvine	Irvine	13.2	13.4	13.4
386. Yale Av.	s/o Walnut Av.	Primary Highway Irvine	Irvine	11.9	12.1	12.1
387. Yale Av.	b/w Deerfield Dr. and ICD	Primary Highway Irvine	Irvine	12.8	12.9	12.9
388. Yale Av.	b/w ICD and Yale Lp.	Primary Highway Irvine	Irvine	11.0	11.2	11.2
389. Thomas	n/o Muirlands Bl.	Collector	Irvine	1.5	1.6	1.5
390. Thomas	s/o Muirlands Bl.	Collector	Irvine	7.0	8.0	8.0
391. Irvine Bl.	e/o Fairbanks	Major Highway Irvine	Irvine	44.1	43.7	43.7
392. Fairbanks	e/o Alton Pkwy.	Collector	Irvine	7.0	8.1	8.1

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Table 5.8-8

General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)¹

<i>Roadway</i>	<i>Segment</i>	<i>Classification¹</i>	<i>Jurisdiction</i>	<i>2011 Approved Project (Baseline)</i>	<i>2012 Modified Project (Option1)</i>	<i>2012 Modified Project (Option2)</i>
393. Fairbanks	w/o Alton Pkwy.	Secondary	Irvine	2.4	5.8	5.8
394. Fairbanks	s/o Astor St.	Collector	Irvine	0.9	4.1	4.1
395. Fairbanks	w/o Irvine Bl.	Collector	Irvine	8.3	21.8	21.8

Source: Noise Study prepared by Urban Crossroads, Inc., June 2012 (see Appendix G of this DSEIR).

Notes: MPH = miles per hour; n/o = north of; s/o = south of; b/w = between

¹ Based on the Heritage Fields Project 2012 - General Plan Amendment / Zone Change Traffic Impact Analysis by Urban Crossroads, Inc. in May 2012..

² Road classifications based on jurisdictions, including Irvine, Aliso Viejo, Laguna Hills, Laguna Woods, Lake Forest, Mission Viejo, Orange, Orange County, and Tustin.

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The off-site traffic noise prediction model inputs are used to calculate the reference CNEL dBA noise levels at a distance of 100 feet from the centerline for the 395 off-site study area roadway segments. Noise level contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. Noise level contours do not take into account the effect of any existing noise barriers or topography.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to the 2012 Modified Project, as well as to the 2011 Approved Project, that will help to reduce and avoid potential impacts related to noise:

- PPP 8-1 Title 6 (Public Works), Division 8 (Pollution), Chapter 2 (Noise) of the Irvine Municipal Code, also known as the City’s Noise Ordinance, outlines the regulations necessary to control unnecessary, excessive and annoying noise in the City. The provisions of this chapter are applicable to nontransportation-related stationary noise sources. It outlines the noise level measurement criteria; establishes the noise zones and the maximum permitted exterior and interior noise standards in each zone; and discloses special noise provisions for construction, truck delivery and maintenance activities. For example, as outlined in Section 6-8-205 of the Noise Ordinance, no construction shall be permitted outside of the hours of 7:00 AM to 7:00 PM Monday through Friday and 9:00 AM to 6:00 PM Saturdays, unless a temporary waiver is granted by the Chief Building Official or authorized representative. Trucks, vehicles, and equipment that are making, or are involved with, material deliveries, loading, or transfer of materials, equipment service, maintenance of any devices or appurtenances for or within any construction project in the City shall not be operated or driven on City streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted shall take impact upon the community into consideration. No construction activity will be permitted outside of these hours except in emergencies including maintenance work on the City rights-of-way that might be required.
- PPP 8-2 Prior to the issuance of building permits for each structure or tenant improvement, other than a parking structure, the applicant shall submit a final acoustical report prepared to the satisfaction of the Director of Community Development. The report shall demonstrate that the development will be sound attenuated against present and projected noise levels including stationary, roadway, aircraft, helicopter, and railroad noise to meet City interior and exterior noise standards. The final acoustical report shall include all information required by the City’s Acoustical Report Information Sheet (Form 42-48). The report shall be accompanied by a list identifying the sheet(s) of the building plans that include required sound attenuation measures (Standard Condition 3.5).
- PPP 8-3 Title 5 (Planning), Division 10 (Grading Code and Encroachment Regulations), Chapter 1 (Grading Code), Section 5-10-127.G (Import and Export of Earth Materials) of the Irvine Municipal Code, states that if a grading project includes the movement of earth material to or from the site in an amount considered substantial by the Chief Building Official, the permittee is required to submit the proposed haul route for review and approval by the Chief Building Official. Special conditions of the grading permit may be imposed that require alternate routes or other measures in consideration of the possible impact on the adjacent community environment or effect on the public right-of-way itself.

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Project Design Features

The following project design features (“PDFs”) have been incorporated into the 2012 Modified Project to help to reduce or avoid its potential noise impacts.

PDF 8-1 **Construction Noise:** Prior to issuance of grading permits, the project applicant or its successor shall incorporate the following measures as a note on the grading plan cover sheet to ensure that the greatest distance between noise sources and sensitive receptors during construction activities has been achieved, and that construction noise has been reduced.

- During construction activities, all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, consistent with manufacturers’ standards. All stationary construction equipment shall be placed so that emitted noise is directed away from the noise-sensitive receptors nearest the Proposed Project Site boundaries.
- Equipment shall be staged in areas that will create the greatest distance between construction-related noise sources and the noise-sensitive receptors nearest the Proposed Project Site during all project construction.
- All construction-related activities shall be restricted to the construction hours outlined in the City’s Noise Ordinance (Municipal Code Section 6-8-205).
- Haul truck and other construction-related trucks traveling to and from the Proposed Project Site shall be restricted to the same hours specified for the operation of construction equipment. To the extent feasible, haul routes shall not pass directly by sensitive land uses or residential dwellings.
- Where construction will occur adjacent to any developed/occupied noise-sensitive uses, a construction-related noise mitigation plan shall be submitted the Director of Community Development for review and approval prior to the issuance of grading permits. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the 2012 Modified Project, through the use of such methods as: (1) temporary noise attenuation fences; (2) preferential location of equipment; and (3) use of current technology and noise-suppression equipment.
- Construction of planned sound walls that have been incorporated into the project design shall be installed prior to construction of the building foundation; or temporary sound blankets (fences typically composed of poly-vinyl-chloride-coated outer shells with absorbent inner insulation) shall be placed along the boundary of the Proposed Project Site facing the nearest noise-sensitive receptors during construction activities.

The following impact analysis addresses impacts that the Initial Study for the 2012 Modified Project disclosed could be potentially significant. The thresholds upon which these determinations were based are identified in brackets after the impact statement.

IMPACT 5.8-1 AS COMPARED TO THE 2011 APPROVED PROJECT, THE 2012 MODIFIED PROJECT WOULD NOT SUBSTANTIALLY ELEVATE TRAFFIC NOISE LEVELS ABOVE LOCAL NOISE STANDARDS AT NOISE-SENSITIVE RECEPTORS PROXIMATE TO THE PROPOSED PROJECT SITE. [IMPACTS N-1 AND N-3]

Impact Analysis: To assess the off-site traffic-related exterior noise level impacts associated with the 2012 Modified Project, the CNEL levels at a distance of 100 feet from the roadway segments included in the traffic study area were developed for the General Plan Post-2030 With 2012 Modified Project for Option 1 and Option 2.

Off-site Traffic-Related Noise Contours

To quantify the 2012 Modified Project's traffic noise impact on the surrounding off-site areas, the changes in traffic noise levels on 395 roadway segments surrounding the Proposed Project Site caused by the 2012 Modified Project (for Option 1 and Option 2) were determined based on the changes in the average daily traffic volumes.

The purpose of the off-site noise contours is to assess the 2012 Modified Project's incremental off-site traffic-related noise impacts at land uses adjacent to roadways conveying project traffic. Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 55, 60, 65 and 70 dBA noise levels. The distance from the centerline of the roadway to the CNEL contours for roadways in the vicinity of the Proposed Project Site for the 2012 Modified Project are presented in the noise technical report prepared by Urban Crossroads (see Appendix G of this DSSEIR).

The off-site traffic noise contours do not take into account the effect of any existing noise barriers or topography that may affect ambient noise levels. In addition, since the traffic noise contours are controlled by the City of Irvine Transportation Related Noise Standards, they do not include the noise contribution from the surrounding commercial and industrial activities within the 2012 Modified Project noise study area.

Off-site 2012 Modified Project Traffic-Related Noise Level Contributions

Based on the significance criteria presented earlier in Subsection 5.8-2, *Thresholds of Significance*, a significant off-site traffic noise impact would occur when a project creates a traffic-related noise level increase in the area adjacent to the roadway of 1.5 dBA and the resulting noise level exceeds the 65 dBA CNEL exterior noise standard. Tables 5.8-9 and 5.8-10 present an off-site traffic noise level comparison of the 2011 Approved Project (the baseline) to the 2012 Modified Project for Option 1 and Option 2 (both without the optional conversion).

2012 Modified Project Option 1

As demonstrated in Table 5.8-9, the 2012 Modified Project Option 1, as compared to the 2011 Approved Project, would result in a change to the off-site traffic noise levels of between -1.4 and 6.6 dBA CNEL on the 395 off-site roadway segments analyzed. Although three of the 395 off-site study area roadway segments located on Fairbanks near the Proposed Project Site entrance at Astor are expected to experience a project related noise level increase of greater than 1.5 dBA CNEL, the overall noise levels will not exceed the 65 dBA significance threshold. In addition, the three off-site study area roadway segments

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expected to experience a noise level increase of greater than three dBA are located within the Tri-Pointe Business Park and outside noise sensitive areas.⁴ Because the 2012 Modified Project's off-site traffic noise level impacts do not exceed the screening significance threshold, its off-site traffic-related noise impacts are considered less than significant.

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
1. Ada	s/o Barranca Pkwy.	57.8	58.9	1.1	NO
2. Alicia Pkwy.	n/o Trabuco Rd.	70.7	70.7	0.0	NO
3. Alicia Pkwy.	s/o Trabuco Rd.	71.2	71.2	0.0	NO
4. Alicia Pkwy.	s/o Jeronimo Rd.	72.6	72.6	0.0	NO
5. Alicia Pkwy.	n/o Muirlands Bl.	72.6	72.6	0.0	NO
6. Alicia Pkwy.	b/w I-5 NB Ramps and Muirlands Bl.	73.0	73.0	0.0	NO
7. Alicia Pkwy.	s/o I-5 SB Ramps	72.1	72.1	0.0	NO
8. Alicia Pkwy.	s/o Paseo de Valencia	71.5	71.5	0.0	NO
9. Alicia Pkwy.	s/o Moulton Pkwy.	71.3	71.3	0.0	NO
10. Aliso Creek Rd.	e/o El Toro Rd.	66.2	66.2	0.0	NO
11. Alton Pkwy.	w/o Culver Dr.	69.9	70.0	0.1	NO
12. Alton Pkwy.	e/o Culver Dr.	69.0	69.0	0.0	NO
13. Alton Pkwy.	e/o W. Yale Loop	68.8	68.9	0.1	NO
14. Alton Pkwy.	e/o Lake Rd.	68.6	68.6	0.0	NO
15. Alton Pkwy.	e/o Creek Rd.	68.4	68.4	0.0	NO
16. Alton Pkwy.	w/o Jeffrey Rd.	69.2	69.2	0.0	NO
17. Alton Pkwy.	b/w Jeffrey Rd. and Royal Oak	68.1	68.1	0.0	NO
18. Alton Pkwy.	b/w Royal Oak and Valley Oak	67.6	67.6	0.0	NO
19. Alton Pkwy.	w/o Sand Canyon Av.	68.8	68.9	0.1	NO
20. Alton Pkwy.	e/o Sand Canyon Av.	70.7	70.7	0.0	NO
21. Alton Pkwy.	e/o Laguna Canyon Rd.	67.2	67.2	0.0	NO

⁴ Sensitive receptors such as residence, hospital, school, hotel, resort, library or similar facility where quiet is an important attribute of the environment are considered a noise sensitive land use.

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*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
22. Alton Pkwy.	b/w Pacifica and Banting	67.4	67.5	0.1	NO
23. Alton Pkwy.	w/o Meridian	66.9	66.9	0.0	NO
24. Alton Pkwy.	b/w Meridian and ICD	68.2	68.2	0.0	NO
25. Alton Pkwy.	b/w Enterprise and Gateway Bl.	71.3	71.4	0.1	NO
26. Alton Pkwy.	b/w Enterprise and I-5 NB Ramps	72.8	72.8	0.0	NO
27. Alton Pkwy.	b/w I-5 NB Ramps and Technology Dr. W	72.9	72.9	0.0	NO
28. Alton Pkwy.	b/w Technology Dr. W and Ada	71.6	71.7	0.1	NO
29. Alton Pkwy.	e/o Ada	71.1	71.1	0.0	NO
30. Alton Pkwy.	w/o Marine Wy.	71.3	71.3	0.0	NO
31. Alton Pkwy.	e/o Technology	71.3	71.3	0.0	NO
32. Alton Pkwy.	s/o Barranca Pkwy./Muirlands Bl.	71.2	71.3	0.1	NO
33. Alton Pkwy.	n/o Barranca Pkwy./Muirlands Bl.	71.9	71.8	-0.1	NO
34. Alton Pkwy.	s/o Jeronimo Rd.	71.9	71.8	-0.1	NO
35. Alton Pkwy.	n/o Jeronimo Rd.	71.5	71.4	-0.1	NO
36. Alton Pkwy.	s/o Toledo Wy.	70.6	70.5	-0.1	NO
37. Alton Pkwy.	n/o Toledo Wy.	70.6	70.4	-0.2	NO
38. Alton Pkwy.	s/o Irvine Bl. / Trabuco Rd.	70.8	70.9	0.1	NO
39. Alton Pkwy.	n/o Irvine Bl.	71.6	71.7	0.1	NO
40. Alton Pkwy.	n/o Commercentre	72.1	72.1	0.0	NO
41. Alton Pkwy.	s/o SR-241 Ramps	68.4	68.4	0.0	NO
42. Alton Pkwy.	n/o SR-241 Ramps	69.3	69.3	0.0	NO
43. Avenida Carlota	w/o Ridge Route Dr.	63.6	63.6	0.0	NO
44. Avenida Carlota	w/o Paseo de Valencia	65.9	65.9	0.0	NO
45. Avenida Carlota	b/w Paseo de Valencia and El Toro Rd.	69.1	69.1	0.0	NO
46. Avenida Carlota	e/o El Toro Rd.	67.2	67.2	0.0	NO
47. Bake Pkwy.	s/o Portola Pkwy.	66.5	66.5	0.0	NO

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*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
48. Bake Pkwy.	n/o Commercentre Dr.	68.7	68.7	0.0	NO
49. Bake Pkwy.	n/o Irvine Bl.	69.3	69.3	0.0	NO
50. Bake Pkwy.	s/o Irvine Bl.	72.5	72.5	0.0	NO
51. Bake Pkwy.	b/w Toledo Wy. and Jeronimo Rd.	73.1	73.1	0.0	NO
52. Bake Pkwy.	n/o Muirlands Bl.	73.6	73.6	0.0	NO
53. Bake Pkwy.	s/o Muirlands Bl.	78.7	78.7	0.0	NO
54. Bake Pkwy.	s/o Rockfield Bl.	74.5	74.6	0.1	NO
55. Bake Pkwy.	n/o I-5 NB Ramps	74.8	74.8	0.0	NO
56. Bake Pkwy.	b/w I-5 SB Ramps and Research Dr.	71.1	71.2	0.1	NO
57. Bake Pkwy.	b/w Research Dr. and ICD	68.0	68.1	0.1	NO
58. Bake Pkwy.	s/ICD	67.7	67.7	0.0	NO
59. Bake Pkwy.	b/w Lake Forest Dr. and Ridge Route Dr.	60.9	60.9	0.0	NO
60. Bake Pkwy.	b/w Ridge Route Dr. and Laguna Canyon	65.9	66.0	0.1	NO
61. Barranca Pkwy.	w/o Culver Dr.	69.9	70.0	0.1	NO
62. Barranca Pkwy.	e/o Culver Dr.	69.4	69.4	0.0	NO
63. Barranca Pkwy.	e/o W. Yale Lp.	69.0	69.0	0.0	NO
64. Barranca Pkwy.	e/o Lake Rd.	68.5	68.5	0.0	NO
65. Barranca Pkwy.	b/w Creek Rd. and Lyon	68.3	68.3	0.0	NO
66. Barranca Pkwy.	w/o E. Yale Lp.	68.3	68.3	0.0	NO
67. Barranca Pkwy.	w/o Jeffrey Rd.	68.8	68.8	0.0	NO
68. Barranca Pkwy.	e/o Jeffrey Rd.	66.9	66.9	0.0	NO
69. Barranca Pkwy.	w/o Sand Canyon. Av.	66.9	67.0	0.1	NO
70. Barranca Pkwy.	e/o Sand Canyon. Av.	66.3	66.3	0.0	NO
71. Barranca Pkwy.	e/o Laguna Canyon Rd.	66.1	66.1	0.0	NO
72. Barranca Pkwy.	b/w Discovery and Banting	65.6	65.6	0.0	NO
73. Barranca Pkwy.	s/o ICD	66.9	67.0	0.1	NO
74. Barranca Pkwy.	b/w I-5 HOV Ramp and ICD	67.5	67.6	0.1	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
75. Barranca Pkwy.	s/o Technology	67.8	67.9	0.1	NO
76. Barranca Pkwy.	n/o Technology	68.0	68.2	0.2	NO
77. Barranca Pkwy.	e/o Ada	67.5	67.8	0.3	NO
78. Barranca Pkwy.	w/o Marine Wy.	68.3	68.5	0.2	NO
79. Barranca Pkwy.	w/o Alton Pkwy.	67.8	67.5	-0.3	NO
80. Barranca Pkwy.	e/o Alton Pkwy.	67.2	67.5	0.3	NO
81. Barranca Pkwy.	e/o Sterling	66.3	66.4	0.1	NO
82. Bryan Av.	w/o Jamboree Rd.	67.6	67.6	0.0	NO
83. Bryan Av.	e/o Jamboree Rd.	67.3	67.4	0.1	NO
84. Bryan Av.	w/o Culver Dr.	68.6	68.6	0.0	NO
85. Bryan Av.	e/o Culver Dr.	67.2	67.3	0.1	NO
86. Bryan Av.	e/o Eastwood	65.8	65.9	0.1	NO
87. Canyon View Av.	w/o Jamboree Rd.	62.2	62.1	-0.1	NO
88. Chapman Ave.	w/o Jamboree Rd.	69.1	69.4	0.3	NO
89. Chapman Ave.	e/o Jamboree Rd.	71.1	71.0	-0.1	NO
90. Creek Rd.	n/o Alton Pkwy.	55.7	55.6	-0.1	NO
91. Culver Dr.	s/o Portola Pkwy.	69.7	69.7	0.0	NO
92. Culver Dr.	n/o Irvine Bl.	70.1	70.2	0.1	NO
93. Culver Dr.	s/o Irvine Bl.	71.2	71.3	0.1	NO
94. Culver Dr.	n/o Bryan Av.	70.7	70.7	0.0	NO
95. Culver Dr.	s/o Bryan Av.	72.7	72.7	0.0	NO
96. Culver Dr.	n/o Trabuco Rd.	72.8	72.8	0.0	NO
97. Culver Dr.	s/o I-5 SB Ramps	73.2	73.2	0.0	NO
98. Culver Dr.	n/o Walnut Av.	72.7	72.8	0.1	NO
99. Culver Dr.	b/w Walnut Av. and Deerfield Dr.	72.4	72.4	0.0	NO
100. Culver Dr.	b/w Deerfield Dr. and ICD	71.9	72.0	0.1	NO
101. Culver Dr.	b/w ICD and Warner Av.	72.2	72.3	0.1	NO
102. Culver Dr.	b/w Warner Av. and Barranca Pkwy.	72.3	72.4	0.1	NO
103. Culver Dr.	n/o Alton Pkwy.	72.7	72.7	0.0	NO
104. Culver Dr.	b/w Alton Pkwy. and Main St.	72.8	72.8	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
105. Culver Dr.	b/w Main St. and San Leandro	72.8	72.8	0.0	NO
106. Culver Dr.	b/w San Leandro and I-405 NB Ramps	73.3	73.3	0.0	NO
107. E. Yale Lp.	s/o Barranca Pkwy.	64.2	64.2	0.0	NO
108. E. Yale Lp.	n/o Alton Pkwy.	65.0	65.0	0.0	NO
109. E. Yale Lp.	s/o Alton Pkwy.	65.0	65.0	0.0	NO
110. El Camino Real	e/o Tustin Ranch Rd.	65.7	65.7	0.0	NO
111. El Camino Real	e/o Jamboree Rd.	68.2	68.3	0.1	NO
112. El Camino Real N.	s/o Bryan Ave.	63.3	63.3	0.0	NO
113. El Toro Rd.	n/o Portola Pkwy. /S. Margarita Pkwy.	67.9	67.9	0.0	NO
114. El Toro Rd.	s/o Portola Pkwy. /S. Margarita Pkwy.	71.2	71.2	0.0	NO
115. El Toro Rd.	n/o Trabuco Rd.	68.3	68.3	0.0	NO
116. El Toro Rd.	n/o Toledo Wy.	72.6	72.6	0.0	NO
117. El Toro Rd.	n/o Jeronimo Rd.	72.6	72.6	0.0	NO
118. El Toro Rd.	s/o Jeronimo Rd.	72.8	72.8	0.0	NO
119. El Toro Rd.	n/o Rockfield Bl.	73.2	73.2	0.0	NO
120. El Toro Rd.	b/w Rockfield Bl. and I-5 NB Ramps	74.3	74.3	0.0	NO
121. El Toro Rd.	b/w I-5 SB Ramps and Avenida Carlota	71.4	71.4	0.0	NO
122. El Toro Rd.	n/o Paseo de Valencia	69.6	69.6	0.0	NO
123. El Toro Rd.	s/o Paseo de Valencia	70.0	70.0	0.0	NO
124. El Toro Rd.	s/o Moulton Pkwy.	70.0	69.9	-0.1	NO
125. El Toro Rd.	n/o Aliso Creek Rd.	69.1	69.1	0.0	NO
126. El Toro Rd.	n/o SR-73	69.6	69.6	0.0	NO
127. El Toro Rd.	s/o SR-73	66.0	66.0	0.0	NO
128. Fortune Dr.	b/w Gateway Bl. and Spectrum	63.8	63.8	0.0	NO
129. Fortune Dr.	b/w Pacifica and Spectrum	63.9	63.9	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?²</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
130. Gateway Bl.	w/o Fortune Dr.	62.9	63.0	0.1	NO
131. Gateway Bl.	n/o Alton Pkwy.	56.7	56.7	0.0	NO
132. Gateway Bl.	w/o ICD	58.7	58.9	0.2	NO
133. Glenn Ranch Rd.	n/o Portola Pkwy.	68.2	68.1	-0.1	NO
134. Glenwood Dr.	w/o Moulton Pkwy.	64.2	64.2	0.0	NO
135. Handy Creek Rd.	e/o Jamboree Rd.	54.1	53.9	-0.2	NO
136. Harvard Av.	s/o Walnut Av.	60.0	59.9	-0.1	NO
137. Harvard Av.	n/o Edinger Av.	65.6	65.6	0.0	NO
138. Harvard Av.	b/w Edinger Av. And Paseo Westpark	66.2	66.2	0.0	NO
139. Hubble	n/o ICD	57.4	57.4	0.0	NO
140. Irvine Bl.	b/w Newport and Red Hill	72.2	72.3	0.1	NO
141. Irvine Bl.	b/w Red Hill and Browning	70.8	70.9	0.1	NO
142. Irvine Bl.	w/o Tustin Ranch Rd.	71.6	71.7	0.1	NO
143. Irvine Bl.	w/o Jamboree Rd.	71.1	71.1	0.0	NO
144. Irvine Bl.	e/o Jamboree Rd.	72.2	72.2	0.0	NO
145. Irvine Bl.	b/w SR-261 Ramps	72.0	72.1	0.1	NO
146. Irvine Bl.	e/o SR-261 NB Ramps	72.2	72.2	0.0	NO
147. Irvine Bl.	w/o Culver Dr.	71.5	71.5	0.0	NO
148. Irvine Bl.	e/o Culver Dr.	71.5	71.6	0.1	NO
149. Irvine Bl.	e/o Yale Av.	71.9	71.9	0.0	NO
150. Irvine Bl.	w/o Jeffrey Rd.	71.4	71.4	0.0	NO
151. Irvine Bl.	e/o Jeffrey Rd.	71.2	71.3	0.1	NO
152. Irvine Bl.	e/o Groveland	71.3	71.3	0.0	NO
153. Irvine Bl.	e/o Sand Canyon Av.	71.5	71.6	0.1	NO
154. Irvine Bl.	e/o SR-133 NB Ramps	71.9	72.0	0.1	NO
155. Irvine Bl.	w/o O St.	71.3	71.4	0.1	NO
156. Irvine Bl.	e/o O St.	71.6	71.6	0.0	NO
157. Irvine Bl.	w/o A St.	71.6	71.7	0.1	NO
158. Irvine Bl.	w/o Z St.	72.2	72.3	0.1	NO

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NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?²</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
159. Irvine Bl.	e/o Z St.	72.3	72.4	0.1	NO
160. Irvine Bl.	w/o LQ St.	72.3	72.2	-0.1	NO
161. Irvine Bl.	e/o LQ St.	72.8	72.6	-0.2	NO
162. Irvine Bl.	w/o Alton Pkwy.	73.0	72.8	-0.2	NO
163. Irvine Bl.	e/o Alton Pkwy.	72.1	71.9	-0.2	NO
164. ICD/Edinger Av.	w/o Jamboree	69.1	69.2	0.1	NO
165. ICD/Edinger Av.	e/o Jamboree	69.7	69.7	0.0	NO
166. ICD	e/o Hearthstone Bl.	69.7	69.8	0.1	NO
167. ICD	e/o Culver Dr.	69.9	69.9	0.0	NO
168. ICD	b/w Yale Av. And Fontaine Av.	70.2	70.2	0.0	NO
169. ICD	e/o Jeffrey Rd.	71.8	71.8	0.0	NO
170. ICD	w/o Sand Canyon. Av.	69.7	69.8	0.1	NO
171. ICD	e/o Sand Canyon Av.	68.5	68.5	0.0	NO
172. ICD	b/w Laguna Canyon Rd. and Discovery	68.1	68.2	0.1	NO
173. ICD	w/o Barranca Pkwy.	69.1	69.1	0.0	NO
174. ICD	b/w Barranca Pkwy. and Gateway Bl.	69.3	69.4	0.1	NO
175. ICD	b/w Gateway Bl. and Alton Pkwy.	68.8	68.8	0.0	NO
176. ICD	b/w Alton Pkwy. and Spectrum	71.0	71.1	0.1	NO
177. ICD	b/w Pacifica and Enterprise Dr.	71.1	71.1	0.0	NO
178. ICD	b/w Enterprise and I-405 SB Ramps	72.9	72.9	0.0	NO
179. ICD	b/w I-405 SB Ramps and Research Dr.	72.0	72.0	0.0	NO
180. ICD	b/w Research Dr. and Hubble	69.4	69.4	0.0	NO
181. ICD	b/w Hubble and Bake Pkwy.	69.1	69.1	0.0	NO
182. ICD	b/w Bake Pkwy. and Muller	68.9	68.9	0.0	NO
183. ICD	b/w Muller and Tesla	68.8	68.8	0.0	NO

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NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
184. ICD	w/o Lake Forest Dr.	68.7	68.7	0.0	NO
185. Jamboree Rd.	n/o Chapman/Santiago Cyn.	67.9	68.1	0.2	NO
186. Jamboree Rd.	s/o Chapman Av.	66.3	66.7	0.4	NO
187. Jamboree Rd.	s/o Canyon View Av.	68.7	68.9	0.2	NO
188. Jamboree Rd.	n/o Tustin Ranch Rd.	69.1	69.2	0.1	NO
189. Jamboree Rd.	s/o Tustin Ranch Rd.	69.0	69.2	0.2	NO
190. Jamboree Rd.	n/o Irvine Bl.	69.2	69.2	0.0	NO
191. Jamboree Rd.	s/o Irvine Bl.	76.5	76.5	0.0	NO
192. Jamboree Rd.	s/o Bryan Av.	76.7	76.7	0.0	NO
193. Jamboree Rd.	b/w El Camino Real and I-5 NB Ramps	78.6	78.6	0.0	NO
194. Jamboree Rd.	n/o Michelle Dr.	78.5	78.5	0.0	NO
195. Jamboree Rd.	s/o Michelle Dr.	73.3	73.3	0.0	NO
196. Jamboree Rd.	n/o Edinger Av.	80.6	80.6	0.0	NO
197. Jamboree Rd.	s/o Edinger Av.	80.1	80.1	0.0	NO
198. Jeffrey Rd.	e/o SR-241 NB Ramps	60.5	60.3	-0.2	NO
199. Jeffrey Rd.	n/o Portola Pkwy.	64.8	64.8	0.0	NO
200. Jeffrey Rd.	n/o Irvine Bl.	70.9	71.0	0.1	NO
201. Jeffrey Rd.	n/o Bryan Av.	71.1	71.2	0.1	NO
202. Jeffrey Rd.	n/o Trabuco Rd.	72.3	72.3	0.0	NO
203. Jeffrey Rd.	s/o Trabuco Rd.	72.7	72.8	0.1	NO
204. Jeffrey Rd.	b/w Roosevelt and I-5 NB Ramps	74.0	74.1	0.1	NO
205. Jeffrey Rd.	s/o Walnut Av./I-5 SB Ramps	72.7	72.6	-0.1	NO
206. Jeffrey Rd.	s/o Irvine Center Drive	72.6	72.6	0.0	NO
207. Jeffrey Rd.	n/o Alton Pkwy.	72.4	72.4	0.0	NO
208. Jeffrey Rd.	b/w Quailcreek and I-405 NB Ramps	73.2	73.2	0.0	NO
209. Jeronimo Rd.	e/o Alton Pkwy.	63.0	63.0	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?²</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
210. Jeronimo Rd.	w/o Lake Forest Dr.	64.3	64.3	0.0	NO
211. Jeronimo Rd.	e/o Lake Forest Dr.	65.8	65.8	0.0	NO
212. Jeronimo Rd.	e/o Ridge Route Dr.	65.3	65.3	0.0	NO
213. Jeromino Rd.	w/o Los Alisos Bl.	68.0	68.0	0.0	NO
214. Jeromino Rd.	e/o Los Alisos Bl.	67.3	67.3	0.0	NO
215. Jeronimo Rd.	s/o Alicia Pkwy.	67.6	67.6	0.0	NO
216. Laguna Canyon Rd.	b/w ICD and Discovery	62.7	62.7	0.0	NO
217. Laguna Canyon Rd.	b/w Waterworks Wy. and ICD	62.7	62.8	0.1	NO
218. Laguna Canyon Rd.	n/o Alton Pkwy.	62.2	62.2	0.0	NO
219. Laguna Canyon Rd.	s/o Alton Pkwy.	64.2	64.2	0.0	NO
220. Laguna Canyon Rd.	n/o Quail Hill Pkwy.	63.2	63.2	0.0	NO
221. Laguna Canyon Rd.	s/o Quail Hill Pkwy.	65.2	65.2	0.0	NO
222. Laguna Canyon Rd.	n/o SR-73 NB Ramps	69.7	69.7	0.0	NO
223. Laguna Hills Dr.	s/o Paseo de Valencia	67.3	67.3	0.0	NO
224. Laguna Hills Dr.	w/o Moulton Pkwy.	69.7	69.7	0.0	NO
225. Lake Rd.	n/o Alton Pkwy.	56.9	56.9	0.0	NO
226. Lake Forest Dr.	s/o Portola Pkwy.	66.1	66.1	0.0	NO
227. Lake Forest Dr.	s/o SR-241 SB Ramps	68.0	67.9	-0.1	NO
228. Lake Forest Dr.	s/o Rancho Pkwy.	69.1	69.1	0.0	NO
229. Lake Forest Dr.	n/o Trabuco Rd.	69.1	69.1	0.0	NO
230. Lake Forest Dr.	s/o Trabuco Rd.	71.0	71.0	0.0	NO
231. Lake Forest Dr.	n/o Jeronimo Rd.	70.8	70.8	0.0	NO
232. Lake Forest Dr.	s/o Jeronimo Rd.	70.9	70.9	0.0	NO
233. Lake Forest Dr.	n/o Muirlands Bl.	69.8	69.8	0.0	NO
234. Lake Forest Dr.	n/o Rockfield Bl.	71.6	71.6	0.0	NO
235. Lake Forest Dr.	b/w Rockfield Bl. and I-5 NB Ramps	73.7	73.7	0.0	NO
236. Lake Forest Dr.	s/o Avenida Carlota/I-5 SB	69.2	69.2	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
	Ramps				
237. Lake Forest Dr.	s/o ICD	66.6	66.7	0.1	NO
238. Lake Forest Dr.	b/w Scientific Way and Tesla	69.0	69.0	0.0	NO
239. Lake Forest Dr.	e/o Bake Pkwy.	69.3	69.4	0.1	NO
240. Lake Forest Dr.	w/o Bake Pkwy.	67.9	67.9	0.0	NO
241. Los Alisos Bl.	n/o Trabuco Rd.	67.1	67.1	0.0	NO
242. Los Alisos Bl.	s/o Trabuco Rd.	69.3	69.3	0.0	NO
243. Los Alisos Bl.	e/o Muirlands Bl.	71.0	71.0	0.0	NO
244. Los Alisos Bl.	w/o Muirlands Bl.	69.1	69.1	0.0	NO
245. Los Alisos Bl.	s/o Rockfield Bl./Fordview St.	69.8	69.8	0.0	NO
246. Los Alisos Bl.	b/w Avenida Carlota and Paseo de Valencia	68.9	68.9	0.0	NO
247. Marine Wy.	w/o O St.	67.6	68.2	0.6	NO
248. Marine Wy.	e/o O St.	68.1	68.7	0.6	NO
249. Marine Wy.	w/o D St.	68.0	68.6	0.6	NO
250. Marine Wy.	e/o D St.	67.4	68.1	0.7	NO
251. Marine Wy	w/o Great Park Blvd East	67.5	68.2	0.7	NO
252. Marine Wy	w/o B St	67.5	68.7	1.2	NO
253. Marine Wy	e/o B St	67.3	67.5	0.2	NO
254. Marine Wy.	n/o Barranca Pkwy.	67.9	67.7	-0.2	NO
255. Marine Wy.	s/o Barranca Pkwy.	66.0	65.7	-0.3	NO
256. Marine Wy.	n/o Rockfield Bl.	68.6	68.0	-0.6	NO
257. Marine Wy.	s/o Rockfield Bl.	67.6	68.2	0.6	NO
258. Meridian	n/o Alton Pkwy.	54.4	54.4	0.0	NO
259. Modjeska	n/o Irvine Bl.	60.7	60.8	0.1	NO
260. Moulton Pkwy.	e/o (s/o) Lake Forest	69.8	69.8	0.0	NO
261. Moulton Pkwy.	e/o (s/o) Ridge Route	70.8	70.7	-0.1	NO
262. Moulton Pkwy.	w/o (n/o) El Toro Rd.	71.3	71.3	0.0	NO
263. Moulton Pkwy.	e/o (s/o) El Toro Rd.	71.4	71.4	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
264. Moulton Pkwy.	b/w Glenwood/Indian Creek and Laguna Hills Dr.	71.0	71.0	0.0	NO
265. Moulton Pkwy.	s/o Laguna Hills Dr.	69.7	69.7	0.0	NO
266. Moulton Pkwy.	s/o Alicia Pkwy.	69.0	69.0	0.0	NO
267. Muirlands Bl.	w/o Bake Pkwy.	66.6	66.6	0.0	NO
268. Muirlands Bl.	e/o Bake Pkwy.	66.5	66.5	0.0	NO
269. Muirlands Bl.	w/o Ridge Route Dr.	67.8	67.8	0.0	NO
270. Muirlands Bl.	e/o Ridge Route Dr.	67.8	67.8	0.0	NO
271. Muirlands Bl.	e/o El Toro Rd.	68.2	68.1	-0.1	NO
272. Muirlands Bl.	s/o Los Alisos Bl.	67.4	67.4	0.0	NO
273. Muirlands Bl.	e/o Alicia Pkwy.	66.5	66.5	0.0	NO
274. Oak Cyn.	w/o Sand Canyon. Av.	57.4	57.4	0.0	NO
275. Orchard Hills	n/o Portola Pkwy.	57.7	57.7	0.0	NO
276. Pacifica	w/o Fortune Dr.	64.7	64.7	0.0	NO
277. Pacifica	w/o (n/o) Alton Pkwy.	63.1	63.0	-0.1	NO
278. Paseo de Valencia	e/o El Toro Rd.	69.1	69.1	0.0	NO
279. Paseo de Valencia	w/o Los Alisos Bl.	69.8	69.8	0.0	NO
280. Paseo de Valencia	e/o Los Alisos Bl.	71.6	71.6	0.0	NO
281. Paseo de Valencia	w/o Alicia Pkwy.	70.4	70.5	0.1	NO
282. Paseo de Valencia	e/o Alicia Pkwy.	65.0	65.0	0.0	NO
283. Portola Pkwy.	w/o Jamboree Rd.	65.4	65.5	0.1	NO
284. Portola Pkwy.	w/o SR-261 SB Ramps	69.7	69.8	0.1	NO
285. Portola Pkwy.	e/o SR-261 NB Ramps	68.9	69.0	0.1	NO
286. Portola Pkwy.	e/o Culver Dr.	69.2	69.3	0.1	NO
287. Portola Pkwy.	w/o Jeffrey Rd.	69.8	69.8	0.0	NO
288. Portola Pkwy.	w/o Sand Canyon. Av.	68.8	68.8	0.0	NO
289. Portola Pkwy.	e/o Sand Canyon. Av.	68.0	68.1	0.1	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
290. Portola Pkwy.	w/o Ridge Valley	68.3	68.3	0.0	NO
291. Portola Pkwy.	e/o Ridge Valley	68.4	68.4	0.0	NO
292. Portola Pkwy.	b/w Silverado and Portola Springs	68.7	68.7	0.0	NO
293. Portola Pkwy.	e/o Portola Springs	68.0	68.1	0.1	NO
294. Portola Pkwy.	w/o Alton Pkwy.	60.5	60.2	-0.3	NO
295. Portola Pkwy.	e/o Alton Pkwy.	68.3	68.3	0.0	NO
296. Portola Pkwy.	w/o Lake Forest Dr.	69.9	69.9	0.0	NO
297. Portola Pkwy.	w/o Glenn Ranch Rd.	71.8	71.8	0.0	NO
298. Portola Pkwy.	e/o Glenn Ranch Rd.	70.3	70.2	-0.1	NO
299. Portola Pkwy. East	s/o SR-241 SB Ramps	70.3	70.3	0.0	NO
300. Portola Pkwy.	s/o Rancho Pkwy.	72.6	72.6	0.0	NO
301. Portola Pkwy.	e/o El Toro Rd.	71.9	71.8	-0.1	NO
302. Portola Springs	s/o Portola Pkwy.	62.6	62.4	-0.2	NO
303. Quail Hill Pkwy.	e/o Shady Canyon Dr.	67.3	67.3	0.0	NO
304. Rancho Pkwy. S	w/o Bake Pkwy.	63.5	63.6	0.1	NO
305. Rancho Pkwy.	w/o Lake Forest Dr.	68.3	68.2	-0.1	NO
306. Rancho Pkwy.	e/o Lake Forest Dr.	66.5	66.5	0.0	NO
307. Research Dr.	e/o ICD	63.9	63.9	0.0	NO
308. Research Dr.	w/o (n/o) Bake Pkwy.	65.1	65.1	0.0	NO
309. Research Dr.	n/o Lake Forest Dr.	65.2	65.2	0.0	NO
310. Ridge Route Dr.	s/o Trabuco Rd.	63.1	63.1	0.0	NO
311. Ridge Route Dr.	n/o Jeronimo Rd.	62.0	62.0	0.0	NO
312. Ridge Route Dr.	s/o Jeronimo Rd.	63.5	63.6	0.1	NO
313. Ridge Route Dr.	s/o Muirlands Bl.	62.6	62.6	0.0	NO
314. Ridge Route Dr.	s/o Rockfield B.	66.1	66.1	0.0	NO
315. Ridge Route Dr.	s/o (w/o) Avenida Carlota	65.3	65.3	0.0	NO
316. Ridge Route Dr.	s/o (w/o) Moulton Pkwy.	63.9	63.9	0.0	NO
317. Ridge Route Dr.	e/o Bake Pkwy.	63.3	63.3	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
318. Ridge Valley	s/o Portola Pkwy.	64.4	64.3	-0.1	NO
319. Rockfield Bl.	e/o Marine Wy	62.4	n/a	n/a	n/a
320. Rockfield Bl.	e/o Sterling	61.7	n/a	n/a	n/a
321. Rockfield Bl.	w/o Bake Pkwy.	64.6	63.2	-1.4	NO
322. Rockfield Bl.	w/o Lake Forest Dr.	66.3	66.3	0.0	NO
323. Rockfield Bl.	w/o Ridge Route Dr.	67.3	67.3	0.0	NO
324. Rockfield Bl.	e/o Ridge Route Dr.	67.3	67.3	0.0	NO
325. Rockfield Bl.	e/o El Toro Rd.	66.5	66.5	0.0	NO
326. Roosevelt	w/o Jeffrey Rd.	64.5	64.5	0.0	NO
327. Roosevelt	e/o Jeffrey Rd.	67.5	67.6	0.1	NO
328. Roosevelt	w/o Sand Canyon Av.	63.7	63.7	0.0	NO
329. Sand Canyon. Av.	n/o Irvine Bl.	68.7	68.6	-0.1	NO
330. Sand Canyon. Av.	s/o Irvine Bl.	70.7	70.7	0.0	NO
331. Sand Canyon. Av.	n/o Trabuco Rd.	70.1	70.1	0.0	NO
332. Sand Canyon. Av.	s/o Trabuco Rd.	77.8	77.7	-0.1	NO
333. Sand Canyon. Av.	s/o Roosevelt	78.0	78.0	0.0	NO
334. Sand Canyon. Av.	n/o I-5 NB Ramps	78.7	78.7	0.0	NO
335. Sand Canyon. Av.	b/w I-5 SB Ramps and Burt Rd.	72.8	72.9	0.1	NO
336. Sand Canyon. Av.	b/w Burt Rd. and Oak Cyn./Laguna Cyn. Rd.	72.9	72.9	0.0	NO
337. Sand Canyon. Av.	n/o ICD	71.9	72.0	0.1	NO
338. Sand Canyon. Av.	s/o Waterworks Wy.	71.5	71.5	0.0	NO
339. Sand Canyon. Av.	s/o Barranca Pkwy.	71.5	71.6	0.1	NO
340. Sand Canyon. Av.	b/w Alton Pkwy. and I-405 NB Ramps	71.8	71.8	0.0	NO
341. Santa Maria Av.	s/o Moulton Pkwy.	63.0	63.0	0.0	NO
342. Santa Maria Av.	e/o Laguna Canyon Rd.	59.8	59.8	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
343. Santiago Canyon Rd.	e/o SR-241 NB Ramp	67.2	67.3	0.1	NO
344. Scientific Wy.	s/o ICD	56.7	56.7	0.0	NO
345. Spectrum	w/o Fortune Dr.	53.9	53.9	0.0	NO
346. Sterling	b/w Rockfield Bl and Barranca Pkwy	55.1	n/a ³	n/a	n/a
347. Technology Dr.	e/o Barranca Pkwy.	67.5	67.6	0.1	NO
348. Technology Dr.	w/o Barranca Pkwy.	66.4	66.4	0.0	NO
349. Technology Dr.	e/o Laguna Canyon Rd.	65.7	65.6	-0.1	NO
350. Toledo Wy.	e/o Alton Pkwy.	61.1	62.4	1.3	NO
351. Toledo Wy.	w/o Lake Forest Dr.	61.3	61.5	0.2	NO
352. Toledo Wy.	w/o Ridge Route Dr.	60.5	60.5	0.0	NO
353. Toledo Wy.	e/o Ridge Route Dr.	62.6	62.6	0.0	NO
354. Trabuco Rd.	b/w Culver Dr. and I-5 NB Ramps	70.2	70.2	0.0	NO
355. Trabuco Rd.	e/o I-5 NB Ramps	67.7	67.8	0.1	NO
356. Trabuco Rd.	w/o Jeffrey Rd.	67.1	67.2	0.1	NO
357. Trabuco Rd.	e/o Jeffrey Rd.	67.2	67.3	0.1	NO
358. Trabuco Rd.	e/o Sand Canyon	68.5	68.4	-0.1	NO
359. Trabuco Rd.	e/o Bake Pkwy.	69.3	69.3	0.0	NO
360. Trabuco Rd.	b/w Lake Forest Dr. and Ridge Route Dr.	70.4	70.4	0.0	NO
361. Trabuco Rd.	w/o El Toro Rd.	70.9	70.9	0.0	NO
362. Trabuco Rd.	e/o El Toro Rd.	67.3	67.3	0.0	NO
363. Trabuco Rd.	n/o Alicia Pkwy.	67.8	67.7	-0.1	NO
364. Trabuco Rd.	s/o Alicia Pkwy.	64.9	64.9	0.0	NO
365. Tustin Ranch Rd.	w/o Jamboree	65.6	65.5	-0.1	NO
366. Tustin Ranch Rd.	s/o Portola Pkwy.	69.8	69.8	0.0	NO
367. Tustin Ranch Rd.	n/o La Colina Dr.	69.8	69.8	0.0	NO
368. Tustin Ranch Rd.	s/o Irvine Bl.	69.4	69.3	-0.1	NO
369. University Dr.	b/w I-405 SB Ramps and Michelson Dr.	73.4	73.4	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-9
Post-2030 With 2012 Modified Project Option 1
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
370. Walnut Av.	w/o Jamboree	69.1	69.1	0.0	NO
371. Walnut Av.	e/o Jamboree	69.3	69.3	0.0	NO
372. Walnut Av.	w/o Culver Dr.	68.5	68.6	0.1	NO
373. Walnut Av.	e/o Culver Dr.	68.5	68.5	0.0	NO
374. Walnut Av.	e/o Yale Av.	65.5	65.5	0.0	NO
375. Walnut Av.	w/o Jeffrey Rd.	67.3	67.3	0.0	NO
376. Warner Av.	w/o Paseo Westpark	64.7	64.8	0.1	NO
377. Warner Av.	w/o Culver Dr.	64.6	64.6	0.0	NO
378. Warner Av.	b/w Culver W. Yale Loop	64.8	64.9	0.1	NO
379. W. Yale Loop	s/o Barranca Pkwy.	62.4	62.5	0.1	NO
380. W. Yale Loop	s/o Alton Pkwy.	65.3	65.3	0.0	NO
381. Yale Av.	b/w Portola and Arborwood	57.1	57.1	0.0	NO
382. Yale Av.	b/w Park Pl. and Irvine Bl.	65.1	65.1	0.0	NO
383. Yale Av.	n/o Bryan Av.	63.7	63.7	0.0	NO
384. Yale Av.	n/o Trabuco Rd.	64.3	64.4	0.1	NO
385. Yale Av.	n/o Walnut Av.	64.5	64.6	0.1	NO
386. Yale Av.	s/o Walnut Av.	65.1	65.2	0.1	NO
387. Yale Av.	b/w Deerfield Dr. and ICD	65.5	65.5	0.0	NO
388. Yale Av.	b/w ICD and Yale Lp.	64.8	64.9	0.1	NO
389. Thomas	n/o Muirlands Bl.	52.5	52.7	0.2	NO
390. Thomas	s/o Muirlands Bl.	59.1	59.7	0.6	NO
391. Irvine Bl.	e/o Fairbanks	72.1	72.0	-0.1	NO
392. Fairbanks	e/o Alton Pkwy.	59.1	59.8	0.7	NO
393. Fairbanks	w/o Alton Pkwy.	55.9	59.7	3.8	NO
394. Fairbanks	s/o Astor St.	50.2	56.8	6.6	NO
395. Fairbanks	w/o Irvine Bl.	59.9	64.1	4.2	NO

Source: Noise Study prepared by Urban Crossroads, Inc., June 2012 (see Appendix G of this DSEIR).

Notes: n/o = north of; s/o = south of; b/w = between; SB = southbound; NB = northbound

¹ 2012 Modified Project Option 1.

² A significant impact is considered to occur when resulting noise levels exceed 65 dBA CNEL and the project creates an increase greater than 1.5 dBA.

³ n/a=Not available, because it is an existing segment that is not part of the 2012 Modified Project.

5. Environmental Analysis

NOISE

2012 Modified Project Option 2

As demonstrated in Table 5.8-10, 2012 Modified Project Option 2, as compared to the 2011 Approved Project, would result in a change in the off-site traffic noise levels of between -1.4 and 6.6 dBA CNEL on the 395 off-site roadway segments analyzed. Although three of the 395 off-site study area roadway segments located on Fairbanks near the Proposed Project Site entrance at Astor are expected to experience a project related noise level increase of greater than 1.5 dBA CNEL, the overall noise levels will not exceed the 65 dBA significance threshold. In addition, the three off-site study area roadway segments expected to experience a noise level increase of greater than three dBA are located within the Tri-Pointe Business Park and outside the noise sensitive areas. Since the 2012 Modified Project's off-site traffic noise level impacts do not exceed the screening significance threshold, its off-site traffic-related noise impacts are considered less than significant.

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
1. Ada	s/o Barranca Pkwy.	57.8	58.9	1.1	NO
2. Alicia Pkwy.	n/o Trabuco Rd.	70.7	70.7	0.0	NO
3. Alicia Pkwy.	s/o Trabuco Rd.	71.2	71.2	0.0	NO
4. Alicia Pkwy.	s/o Jeronimo Rd.	72.6	72.6	0.0	NO
5. Alicia Pkwy.	n/o Muirlands Bl.	72.6	72.6	0.0	NO
6. Alicia Pkwy.	b/w I-5 NB Ramps and Muirlands Bl.	73.0	73.0	0.0	NO
7. Alicia Pkwy.	s/o I-5 SB Ramps	72.1	72.1	0.0	NO
8. Alicia Pkwy.	s/o Paseo de Valencia	71.5	71.5	0.0	NO
9. Alicia Pkwy.	s/o Moulton Pkwy.	71.3	71.3	0.0	NO
10. Aliso Creek Rd.	e/o El Toro Rd.	66.2	66.2	0.0	NO
11. Alton Pkwy.	w/o Culver Dr.	69.9	70.0	0.1	NO
12. Alton Pkwy.	e/o Culver Dr.	69.0	69.0	0.0	NO
13. Alton Pkwy.	e/o W. Yale Loop	68.8	68.9	0.1	NO
14. Alton Pkwy.	e/o Lake Rd.	68.6	68.6	0.0	NO
15. Alton Pkwy.	e/o Creek Rd.	68.4	68.4	0.0	NO
16. Alton Pkwy.	w/o Jeffrey Rd.	69.2	69.2	0.0	NO
17. Alton Pkwy.	b/w Jeffrey Rd. and Royal Oak	68.1	68.1	0.0	NO
18. Alton Pkwy.	b/w Royal Oak and Valley Oak	67.6	67.6	0.0	NO
19. Alton Pkwy.	w/o Sand Canyon Av.	68.8	68.8	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
20. Alton Pkwy.	e/o Sand Canyon Av.	70.7	70.7	0.0	NO
21. Alton Pkwy.	e/o Laguna Canyon Rd.	67.2	67.2	0.0	NO
22. Alton Pkwy.	b/w Pacifica and Banting	67.4	67.5	0.1	NO
23. Alton Pkwy.	w/o Meridian	66.9	66.9	0.0	NO
24. Alton Pkwy.	b/w Meridian and ICD	68.2	68.2	0.0	NO
25. Alton Pkwy.	b/w Enterprise and Gateway Bl.	71.3	71.4	0.1	NO
26. Alton Pkwy.	b/w Enterprise and I-5 NB Ramps	72.8	72.8	0.0	NO
27. Alton Pkwy.	b/w I-5 NB Ramps and Technology Dr. W	72.9	72.9	0.0	NO
28. Alton Pkwy.	b/w Technology Dr. W and Ada	71.6	71.7	0.1	NO
29. Alton Pkwy.	e/o Ada	71.1	71.1	0.0	NO
30. Alton Pkwy.	w/o Marine Wy.	71.3	71.4	0.1	NO
31. Alton Pkwy.	e/o Technology	71.3	71.4	0.1	NO
32. Alton Pkwy.	s/o Barranca Pkwy./Muirlands Bl.	71.2	71.3	0.1	NO
33. Alton Pkwy.	n/o Barranca Pkwy./Muirlands Bl.	71.9	71.9	0.0	NO
34. Alton Pkwy.	s/o Jeronimo Rd.	71.9	71.9	0.0	NO
35. Alton Pkwy.	n/o Jeronimo Rd.	71.5	71.4	-0.1	NO
36. Alton Pkwy.	s/o Toledo Wy.	70.6	70.5	-0.1	NO
37. Alton Pkwy.	n/o Toledo Wy.	70.6	70.4	-0.2	NO
38. Alton Pkwy.	s/o Irvine Bl. / Trabuco Rd.	70.8	70.9	0.1	NO
39. Alton Pkwy.	n/o Irvine Bl.	71.6	71.7	0.1	NO
40. Alton Pkwy.	n/o Commercentre	72.1	72.1	0.0	NO
41. Alton Pkwy.	s/o SR-241 Ramps	68.4	68.4	0.0	NO
42. Alton Pkwy.	n/o SR-241 Ramps	69.3	69.3	0.0	NO
43. Avenida Carlota	w/o Ridge Route Dr.	63.6	63.6	0.0	NO
44. Avenida Carlota	w/o Paseo de Valencia	65.9	65.9	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
45. Avenida Carlota	b/w Paseo de Valencia and El Toro Rd.	69.1	69.1	0.0	NO
46. Avenida Carlota	e/o El Toro Rd.	67.2	67.2	0.0	NO
47. Bake Pkwy.	s/o Portola Pkwy.	66.5	66.5	0.0	NO
48. Bake Pkwy.	n/o Commercentre Dr.	68.7	68.7	0.0	NO
49. Bake Pkwy.	n/o Irvine Bl.	69.3	69.3	0.0	NO
50. Bake Pkwy.	s/o Irvine Bl.	72.5	72.5	0.0	NO
51. Bake Pkwy.	b/w Toledo Wy. and Jeronimo Rd.	73.1	73.1	0.0	NO
52. Bake Pkwy.	n/o Muirlands Bl.	73.6	73.6	0.0	NO
53. Bake Pkwy.	s/o Muirlands Bl.	78.7	78.7	0.0	NO
54. Bake Pkwy.	s/o Rockfield Bl.	74.5	74.6	0.1	NO
55. Bake Pkwy.	n/o I-5 NB Ramps	74.8	74.8	0.0	NO
56. Bake Pkwy.	b/w I-5 SB Ramps and Research Dr.	71.1	71.2	0.1	NO
57. Bake Pkwy.	b/w Research Dr. and ICD	68.0	68.0	0.0	NO
58. Bake Pkwy.	s/ICD	67.7	67.7	0.0	NO
59. Bake Pkwy.	b/w Lake Forest Dr. and Ridge Route Dr.	60.9	60.9	0.0	NO
60. Bake Pkwy.	b/w Ridge Route Dr. and Laguna Canyon	65.9	66.0	0.1	NO
61. Barranca Pkwy.	w/o Culver Dr.	69.9	70.0	0.1	NO
62. Barranca Pkwy.	e/o Culver Dr.	69.4	69.4	0.0	NO
63. Barranca Pkwy.	e/o W. Yale Lp.	69.0	69.0	0.0	NO
64. Barranca Pkwy.	e/o Lake Rd.	68.5	68.5	0.0	NO
65. Barranca Pkwy.	b/w Creek Rd. and Lyon	68.3	68.3	0.0	NO
66. Barranca Pkwy.	w/o E. Yale Lp.	68.3	68.3	0.0	NO
67. Barranca Pkwy.	w/o Jeffrey Rd.	68.8	68.8	0.0	NO
68. Barranca Pkwy.	e/o Jeffrey Rd.	66.9	66.9	0.0	NO
69. Barranca Pkwy.	w/o Sand Canyon. Av.	66.9	67.0	0.1	NO
70. Barranca Pkwy.	e/o Sand Canyon. Av.	66.3	66.3	0.0	NO
71. Barranca Pkwy.	e/o Laguna Canyon Rd.	66.1	66.1	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
72. Barranca Pkwy.	b/w Discovery and Banting	65.6	65.6	0.0	NO
73. Barranca Pkwy.	s/o ICD	66.9	67.0	0.1	NO
74. Barranca Pkwy.	b/w I-5 HOV Ramp and ICD	67.5	67.6	0.1	NO
75. Barranca Pkwy.	s/o Technology	67.8	67.9	0.1	NO
76. Barranca Pkwy.	n/o Technology	68.0	68.2	0.2	NO
77. Barranca Pkwy.	e/o Ada	67.5	67.8	0.3	NO
78. Barranca Pkwy.	w/o Marine Wy.	68.3	68.5	0.2	NO
79. Barranca Pkwy.	w/o Alton Pkwy.	67.8	67.5	-0.3	NO
80. Barranca Pkwy.	e/o Alton Pkwy.	67.2	67.5	0.3	NO
81. Barranca Pkwy.	e/o Sterling	66.3	66.4	0.1	NO
82. Bryan Av.	w/o Jamboree Rd.	67.6	67.6	0.0	NO
83. Bryan Av.	e/o Jamboree Rd.	67.3	67.4	0.1	NO
84. Bryan Av.	w/o Culver Dr.	68.6	68.7	0.1	NO
85. Bryan Av.	e/o Culver Dr.	67.2	67.3	0.1	NO
86. Bryan Av.	e/o Eastwood	65.8	65.9	0.1	NO
87. Canyon View Av.	w/o Jamboree Rd.	62.2	62.1	-0.1	NO
88. Chapman Ave.	w/o Jamboree Rd.	69.1	69.4	0.3	NO
89. Chapman Ave.	e/o Jamboree Rd.	71.1	71.0	-0.1	NO
90. Creek Rd.	n/o Alton Pkwy.	55.7	55.7	0.0	NO
91. Culver Dr.	s/o Portola Pkwy.	69.7	69.7	0.0	NO
92. Culver Dr.	n/o Irvine Bl.	70.1	70.2	0.1	NO
93. Culver Dr.	s/o Irvine Bl.	71.2	71.3	0.1	NO
94. Culver Dr.	n/o Bryan Av.	70.7	70.7	0.0	NO
95. Culver Dr.	s/o Bryan Av.	72.7	72.7	0.0	NO
96. Culver Dr.	n/o Trabuco Rd.	72.8	72.8	0.0	NO
97. Culver Dr.	s/o I-5 SB Ramps	73.2	73.2	0.0	NO
98. Culver Dr.	n/o Walnut Av.	72.7	72.8	0.1	NO
99. Culver Dr.	b/w Walnut Av. and Deerfield Dr.	72.4	72.4	0.0	NO
100. Culver Dr.	b/w Deerfield Dr. and ICD	71.9	72.0	0.1	NO
101. Culver Dr.	b/w ICD and Warner Av.	72.2	72.3	0.1	NO

5. Environmental Analysis

NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
102. Culver Dr.	b/w Warner Av. and Barranca Pkwy.	72.3	72.4	0.1	NO
103. Culver Dr.	n/o Alton Pkwy.	72.7	72.7	0.0	NO
104. Culver Dr.	b/w Alton Pkwy. and Main St.	72.8	72.8	0.0	NO
105. Culver Dr.	b/w Main St. and San Leandro	72.8	72.8	0.0	NO
106. Culver Dr.	b/w San Leandro and I-405 NB Ramps	73.3	73.3	0.0	NO
107. E. Yale Lp.	s/o Barranca Pkwy.	64.2	64.2	0.0	NO
108. E. Yale Lp.	n/o Alton Pkwy.	65.0	65.0	0.0	NO
109. E. Yale Lp.	s/o Alton Pkwy.	65.0	65.0	0.0	NO
110. El Camino Real	e/o Tustin Ranch Rd.	65.7	65.7	0.0	NO
111. El Camino Real	e/o Jamboree Rd.	68.2	68.3	0.1	NO
112. El Camino Real N.	s/o Bryan Ave.	63.3	63.3	0.0	NO
113. El Toro Rd.	n/o Portola Pkwy./S. Margarita Pkwy.	67.9	67.9	0.0	NO
114. El Toro Rd.	s/o Portola Pkwy./S. Margarita Pkwy.	71.2	71.2	0.0	NO
115. El Toro Rd.	n/o Trabuco Rd.	68.3	68.3	0.0	NO
116. El Toro Rd.	n/o Toledo Wy.	72.6	72.6	0.0	NO
117. El Toro Rd.	n/o Jeronimo Rd.	72.6	72.6	0.0	NO
118. El Toro Rd.	s/o Jeronimo Rd.	72.8	72.8	0.0	NO
119. El Toro Rd.	n/o Rockfield Bl.	73.2	73.2	0.0	NO
120. El Toro Rd.	b/w Rockfield Bl. and I-5 NB Ramps	74.3	74.3	0.0	NO
121. El Toro Rd.	b/w I-5 SB Ramps and Avenida Carlota	71.4	71.4	0.0	NO
122. El Toro Rd.	n/o Paseo de Valencia	69.6	69.6	0.0	NO
123. El Toro Rd.	s/o Paseo de Valencia	70.0	70.0	0.0	NO
124. El Toro Rd.	s/o Moulton Pkwy.	70.0	69.9	-0.1	NO
125. El Toro Rd.	n/o Aliso Creek Rd.	69.1	69.1	0.0	NO

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NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
126. El Toro Rd.	n/o SR-73	69.6	69.6	0.0	NO
127. El Toro Rd.	s/o SR-73	66.0	66.0	0.0	NO
128. Fortune Dr.	b/w Gateway Bl. and Spectrum	63.8	63.8	0.0	NO
129. Fortune Dr.	b/w Pacifica and Spectrum	63.9	63.9	0.0	NO
130. Gateway Bl.	w/o Fortune Dr.	62.9	62.9	0.0	NO
131. Gateway Bl.	n/o Alton Pkwy.	56.7	56.7	0.0	NO
132. Gateway Bl.	w/o ICD	58.7	58.9	0.2	NO
133. Glenn Ranch Rd.	n/o Portola Pkwy.	68.2	68.2	0.0	NO
134. Glenwood Dr.	w/o Moulton Pkwy.	64.2	64.2	0.0	NO
135. Handy Creek Rd.	e/o Jamboree Rd.	54.1	53.9	-0.2	NO
136. Harvard Av.	s/o Walnut Av.	60.0	59.9	-0.1	NO
137. Harvard Av.	n/o Edinger Av.	65.6	65.6	0.0	NO
138. Harvard Av.	b/w Edinger Av. And Paseo Westpark	66.2	66.2	0.0	NO
139. Hubble	n/o ICD	57.4	57.4	0.0	NO
140. Irvine Bl.	b/w Newport and Red Hill	72.2	72.3	0.1	NO
141. Irvine Bl.	b/w Red Hill and Browning	70.8	70.9	0.1	NO
142. Irvine Bl.	w/o Tustin Ranch Rd.	71.6	71.7	0.1	NO
143. Irvine Bl.	w/o Jamboree Rd.	71.1	71.1	0.0	NO
144. Irvine Bl.	e/o Jamboree Rd.	72.2	72.2	0.0	NO
145. Irvine Bl.	b/w SR-261 Ramps	72.0	72.1	0.1	NO
146. Irvine Bl.	e/o SR-261 NB Ramps	72.2	72.2	0.0	NO
147. Irvine Bl.	w/o Culver Dr.	71.5	71.5	0.0	NO
148. Irvine Bl.	e/o Culver Dr.	71.5	71.6	0.1	NO
149. Irvine Bl.	e/o Yale Av.	71.9	71.9	0.0	NO
150. Irvine Bl.	w/o Jeffrey Rd.	71.4	71.4	0.0	NO
151. Irvine Bl.	e/o Jeffrey Rd.	71.2	71.3	0.1	NO
152. Irvine Bl.	e/o Groveland	71.3	71.3	0.0	NO
153. Irvine Bl.	e/o Sand Canyon. Av.	71.5	71.6	0.1	NO

5. Environmental Analysis

NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?²</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
154. Irvine Bl.	e/o SR-133 NB Ramps	71.9	72.0	0.1	NO
155. Irvine Bl.	w/o O St.	71.3	71.3	0.0	NO
156. Irvine Bl.	e/o O St.	71.6	71.6	0.0	NO
157. Irvine Bl.	w/o A St.	71.6	71.7	0.1	NO
158. Irvine Bl.	w/o Z St.	72.2	72.3	0.1	NO
159. Irvine Bl.	e/o Z St.	72.3	72.4	0.1	NO
160. Irvine Bl.	w/o LQ St.	72.3	72.2	-0.1	NO
161. Irvine Bl.	e/o LQ St.	72.8	72.6	-0.2	NO
162. Irvine Bl.	w/o Alton Pkwy.	73.0	72.8	-0.2	NO
163. Irvine Bl.	e/o Alton Pkwy.	72.1	71.9	-0.2	NO
164. ICD/Edinger Av.	w/o Jamboree	69.1	69.2	0.1	NO
165. ICD/Edinger Av.	e/o Jamboree	69.7	69.7	0.0	NO
166. ICD	e/o Hearthstone Bl.	69.7	69.8	0.1	NO
167. ICD	e/o Culver Dr.	69.9	69.9	0.0	NO
168. ICD	b/w Yale Av. And Fontaine Av.	70.2	70.2	0.0	NO
169. ICD	e/o Jeffrey Rd.	71.8	71.8	0.0	NO
170. ICD	w/o Sand Canyon Av.	69.7	69.8	0.1	NO
171. ICD	e/o Sand Canyon Av.	68.5	68.5	0.0	NO
172. ICD	b/w Laguna Canyon Rd. and Discovery	68.1	68.2	0.1	NO
173. ICD	w/o Barranca Pkwy.	69.1	69.1	0.0	NO
174. ICD	b/w Barranca Pkwy. and Gateway Bl.	69.3	69.4	0.1	NO
175. ICD	b/w Gateway Alton Pkwy.	68.8	68.8	0.0	NO
176. ICD	b/w Alton Pkwy. and Spectrum	71.0	71.0	0.0	NO
177. ICD	b/w Pacifica and Enterprise Dr.	71.1	71.1	0.0	NO
178. ICD	b/w Enterprise and I-405 SB Ramps	72.9	72.9	0.0	NO
179. ICD	b/w I-405 SB Ramps and Research Dr.	72.0	72.0	0.0	NO

5. Environmental Analysis

NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
180. ICD	b/w Research Dr. and Hubble	69.4	69.4	0.0	NO
181. ICD	b/w Hubble and Bake Pkwy.	69.1	69.1	0.0	NO
182. ICD	b/w Bake Pkwy. and Muller	68.9	68.9	0.0	NO
183. ICD	b/w Muller and Tesla	68.8	68.8	0.0	NO
184. ICD	w/o Lake Forest Dr.	68.7	68.7	0.0	NO
185. Jamboree Rd.	n/o Chapman/Santiago Cyn.	67.9	68.1	0.2	NO
186. Jamboree Rd.	s/o Chapman Av.	66.3	66.7	0.4	NO
187. Jamboree Rd.	s/o Canyon View Av.	68.7	68.9	0.2	NO
188. Jamboree Rd.	n/o Tustin Ranch Rd.	69.1	69.2	0.1	NO
189. Jamboree Rd.	s/o Tustin Ranch Rd.	69.0	69.2	0.2	NO
190. Jamboree Rd.	n/o Irvine Bl.	69.2	69.3	0.1	NO
191. Jamboree Rd.	s/o Irvine Bl.	76.5	76.5	0.0	NO
192. Jamboree Rd.	s/o Bryan Av.	76.7	76.7	0.0	NO
193. Jamboree Rd.	b/w El Camino Real and I-5 NB Ramps	78.6	78.6	0.0	NO
194. Jamboree Rd.	n/o Michelle Dr.	78.5	78.5	0.0	NO
195. Jamboree Rd.	s/o Michelle Dr.	73.3	73.3	0.0	NO
196. Jamboree Rd.	n/o Edinger Av.	80.6	80.6	0.0	NO
197. Jamboree Rd.	s/o Edinger Av.	80.1	80.1	0.0	NO
198. Jeffrey Rd.	e/o SR-241 NB Ramps	60.5	60.3	-0.2	NO
199. Jeffrey Rd.	n/o Portola Pkwy.	64.8	64.8	0.0	NO
200. Jeffrey Rd.	n/o Irvine Bl.	70.9	70.9	0.0	NO
201. Jeffrey Rd.	n/o Bryan Av.	71.1	71.2	0.1	NO
202. Jeffrey Rd.	n/o Trabuco Rd.	72.3	72.3	0.0	NO
203. Jeffrey Rd.	s/o Trabuco Rd.	72.7	72.8	0.1	NO
204. Jeffrey Rd.	b/w Roosevelt and I-5 NB Ramps	74.0	74.1	0.1	NO
205. Jeffrey Rd.	s/o Walnut Av./I-5 SB Ramps	72.7	72.6	-0.1	NO

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NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
206. Jeffrey Rd.	s/o Irvine Center Drive	72.6	72.6	0.0	NO
207. Jeffrey Rd.	n/o Alton Pkwy.	72.4	72.4	0.0	NO
208. Jeffrey Rd.	b/w Quailcreek and I-405 NB Ramps	73.2	73.3	0.1	NO
209. Jeronimo Rd.	e/o Alton Pkwy.	63.0	63.0	0.0	NO
210. Jeronimo Rd.	w/o Lake Forest Dr.	64.3	64.3	0.0	NO
211. Jeronimo Rd.	e/o Lake Forest Dr.	65.8	65.8	0.0	NO
212. Jeronimo Rd.	e/o Ridge Route Dr.	65.3	65.3	0.0	NO
213. Jeromino Rd.	w/o Los Alisos Bl.	68.0	68.0	0.0	NO
214. Jeromino Rd.	e/o Los Alisos Bl.	67.3	67.3	0.0	NO
215. Jeronimo Rd.	s/o Alicia Pkwy.	67.6	67.6	0.0	NO
216. Laguna Canyon Rd.	b/w ICD and Discovery	62.7	62.7	0.0	NO
217. Laguna Canyon Rd.	b/w Waterworks Wy. and ICD	62.7	62.8	0.1	NO
218. Laguna Canyon Rd.	n/o Alton Pkwy.	62.2	62.2	0.0	NO
219. Laguna Canyon Rd.	s/o Alton Pkwy.	64.2	64.2	0.0	NO
220. Laguna Canyon Rd.	n/o Quail Hill Pkwy.	63.2	63.2	0.0	NO
221. Laguna Canyon Rd.	s/o Quail Hill Pkwy.	65.2	65.2	0.0	NO
222. Laguna Canyon Rd.	n/o SR-73 NB Ramps	69.7	69.7	0.0	NO
223. Laguna Hills Dr.	s/o Paseo de Valencia	67.3	67.4	0.1	NO
224. Laguna Hills Dr.	w/o Moulton Pkwy.	69.7	69.7	0.0	NO
225. Lake Rd.	n/o Alton Pkwy.	56.9	56.9	0.0	NO
226. Lake Forest Dr.	s/o Portola Pkwy.	66.1	66.1	0.0	NO
227. Lake Forest Dr.	s/o SR-241 SB Ramps	68.0	67.9	-0.1	NO
228. Lake Forest Dr.	s/o Rancho Pkwy.	69.1	69.1	0.0	NO
229. Lake Forest Dr.	n/o Trabuco Rd.	69.1	69.1	0.0	NO
230. Lake Forest Dr.	s/o Trabuco Rd.	71.0	71.0	0.0	NO
231. Lake Forest Dr.	n/o Jeronimo Rd.	70.8	70.8	0.0	NO

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NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
232. Lake Forest Dr.	s/o Jeronimo Rd.	70.9	70.9	0.0	NO
233. Lake Forest Dr.	n/o Muirlands Bl.	69.8	69.8	0.0	NO
234. Lake Forest Dr.	n/o Rockfield Bl.	71.6	71.6	0.0	NO
235. Lake Forest Dr.	b/w Rockfield Bl. and I-5 NB Ramps	73.7	73.7	0.0	NO
236. Lake Forest Dr.	s/o Avenida Carlota/I-5 SB Ramps	69.2	69.2	0.0	NO
237. Lake Forest Dr.	s/o ICD	66.6	66.7	0.1	NO
238. Lake Forest Dr.	b/w Scientific Way and Tesla	69.0	69.0	0.0	NO
239. Lake Forest Dr.	e/o Bake Pkwy.	69.3	69.4	0.1	NO
240. Lake Forest Dr.	w/o Bake Pkwy.	67.9	67.9	0.0	NO
241. Los Alisos Bl.	n/o Trabuco Rd.	67.1	67.1	0.0	NO
242. Los Alisos Bl.	s/o Trabuco Rd.	69.3	69.3	0.0	NO
243. Los Alisos Bl.	e/o Muirlands Bl.	71.0	71.0	0.0	NO
244. Los Alisos Bl.	w/o Muirlands Bl.	69.1	69.1	0.0	NO
245. Los Alisos Bl.	s/o Rockfield Bl./Fordview St.	69.8	69.8	0.0	NO
246. Los Alisos Bl.	b/w Avenida Carlota and Paseo de Valencia	68.9	68.9	0.0	NO
247. Marine Wy.	w/o O St.	67.6	68.2	0.6	NO
248. Marine Wy.	e/o O St.	68.1	68.7	0.6	NO
249. Marine Wy.	w/o D St.	68.0	68.6	0.6	NO
250. Marine Wy.	e/o D St.	67.4	68.1	0.7	NO
251. Marine Wy	w/o Great Park Blvd East	67.5	68.2	0.7	NO
252. Marine Wy	w/o B St	67.5	68.7	1.2	NO
253. Marine Wy	e/o B St	67.3	67.5	0.2	NO
254. Marine Wy.	n/o Barranca Pkwy.	67.9	67.7	-0.2	NO
255. Marine Wy.	s/o Barranca Pkwy.	66.0	65.7	-0.3	NO
256. Marine Wy.	n/o Rockfield Bl.	68.6	68.0	-0.6	NO
257. Marine Wy.	s/o Rockfield Bl.	67.6	68.2	0.6	NO
258. Meridian	n/o Alton Pkwy.	54.4	54.4	0.0	NO
259. Modjeska	n/o Irvine Bl.	60.7	60.8	0.1	NO

5. Environmental Analysis

NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?²</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
260. Moulton Pkwy.	e/o (s/o) Lake Forest	69.8	69.8	0.0	NO
261. Moulton Pkwy.	e/o (s/o) Ridge Route	70.8	70.7	-0.1	NO
262. Moulton Pkwy.	w/o (n/o) El Toro Rd.	71.3	71.3	0.0	NO
263. Moulton Pkwy.	e/o (s/o) El Toro Rd.	71.4	71.4	0.0	NO
264. Moulton Pkwy.	b/w Glenwood/Indian Creek and Laguna Hills Dr.	71.0	71.0	0.0	NO
265. Moulton Pkwy.	s/o Laguna Hills Dr.	69.7	69.7	0.0	NO
266. Moulton Pkwy.	s/o Alicia Pkwy.	69.0	69.0	0.0	NO
267. Muirlands Bl.	w/o Bake Pkwy.	66.6	66.6	0.0	NO
268. Muirlands Bl.	e/o Bake Pkwy.	66.5	66.5	0.0	NO
269. Muirlands Bl.	w/o Ridge Route Dr.	67.8	67.8	0.0	NO
270. Muirlands Bl.	e/o Ridge Route Dr.	67.8	67.8	0.0	NO
271. Muirlands Bl.	e/o El Toro Rd.	68.2	68.1	-0.1	NO
272. Muirlands Bl.	s/o Los Alisos Bl.	67.4	67.4	0.0	NO
273. Muirlands Bl.	e/o Alicia Pkwy.	66.5	66.5	0.0	NO
274. Oak Cyn.	w/o Sand Canyon. Av.	57.4	57.4	0.0	NO
275. Orchard Hills	n/o Portola Pkwy.	57.7	57.7	0.0	NO
276. Pacifica	w/o Fortune Dr.	64.7	64.6	-0.1	NO
277. Pacifica	w/o (n/o) Alton Pkwy.	63.1	63.0	-0.1	NO
278. Paseo de Valencia	e/o El Toro Rd.	69.1	69.1	0.0	NO
279. Paseo de Valencia	w/o Los Alisos Bl.	69.8	69.8	0.0	NO
280. Paseo de Valencia	e/o Los Alisos Bl.	71.6	71.6	0.0	NO
281. Paseo de Valencia	w/o Alicia Pkwy.	70.4	70.5	0.1	NO
282. Paseo de Valencia	e/o Alicia Pkwy.	65.0	65.0	0.0	NO
283. Portola Pkwy.	w/o Jamboree Rd.	65.4	65.5	0.1	NO
284. Portola Pkwy.	w/o SR-261 SB Ramps	69.7	69.9	0.2	NO

5. Environmental Analysis

NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?²</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
285. Portola Pkwy.	e/o SR-261 NB Ramps	68.9	69.0	0.1	NO
286. Portola Pkwy.	e/o Culver Dr.	69.2	69.3	0.1	NO
287. Portola Pkwy.	w/o Jeffrey Rd.	69.8	69.8	0.0	NO
288. Portola Pkwy.	w/o Sand Canyon. Av.	68.8	68.8	0.0	NO
289. Portola Pkwy.	e/o Sand Canyon. Av.	68.0	68.0	0.0	NO
290. Portola Pkwy.	w/o Ridge Valley	68.3	68.3	0.0	NO
291. Portola Pkwy.	e/o Ridge Valley	68.4	68.4	0.0	NO
292. Portola Pkwy.	b/w Silverado and Portola Springs	68.7	68.7	0.0	NO
293. Portola Pkwy.	e/o Portola Springs	68.0	68.1	0.1	NO
294. Portola Pkwy.	w/o Alton Pkwy.	60.5	60.2	-0.3	NO
295. Portola Pkwy.	e/o Alton Pkwy.	68.3	68.3	0.0	NO
296. Portola Pkwy.	w/o Lake Forest Dr.	69.9	69.9	0.0	NO
297. Portola Pkwy.	w/o Glenn Ranch Rd.	71.8	71.8	0.0	NO
298. Portola Pkwy.	e/o Glenn Ranch Rd.	70.3	70.2	-0.1	NO
299. Portola Pkwy. East	s/o SR-241 SB Ramps	70.3	70.3	0.0	NO
300. Portola Pkwy.	s/o Rancho Pkwy.	72.6	72.6	0.0	NO
301. Portola Pkwy.	e/o El Toro Rd.	71.9	71.8	-0.1	NO
302. Portola Springs	s/o Portola Pkwy.	62.6	62.4	-0.2	NO
303. Quail Hill Pkwy.	e/o Shady Canyon Dr.	67.3	67.3	0.0	NO
304. Rancho Pkwy. S	w/o Bake Pkwy.	63.5	63.6	0.1	NO
305. Rancho Pkwy.	w/o Lake Forest Dr.	68.3	68.2	-0.1	NO
306. Rancho Pkwy.	e/o Lake Forest Dr.	66.5	66.5	0.0	NO
307. Research Dr.	e/o ICD	63.9	63.9	0.0	NO
308. Research Dr.	w/o (n/o) Bake Pkwy.	65.1	65.1	0.0	NO
309. Research Dr.	n/o Lake Forest Dr.	65.2	65.2	0.0	NO
310. Ridge Route Dr.	s/o Trabuco Rd.	63.1	63.1	0.0	NO
311. Ridge Route Dr.	n/o Jeronimo Rd.	62.0	62.0	0.0	NO
312. Ridge Route Dr.	s/o Jeronimo Rd.	63.5	63.6	0.1	NO

5. Environmental Analysis

NOISE

*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?²</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
313. Ridge Route Dr.	s/o Muirlands Bl.	62.6	62.6	0.0	NO
314. Ridge Route Dr.	s/o Rockfield B.	66.1	66.1	0.0	NO
315. Ridge Route Dr.	s/o (w/o) Avenida Carlota	65.3	65.3	0.0	NO
316. Ridge Route Dr.	s/o (w/o) Moulton Pkwy.	63.9	64.0	0.1	NO
317. Ridge Route Dr.	e/o Bake Pkwy.	63.3	63.3	0.0	NO
318. Ridge Valley	s/o Portola Pkwy.	64.4	64.3	-0.1	NO
319. Rockfield Bl.	e/o Marine Wy	62.4	n/a	n/a	n/a
320. Rockfield Bl.	e/o Sterling	61.7	n/a ³	n/a	n/a
321. Rockfield Bl.	w/o Bake Pkwy.	64.6	63.2	-1.4	NO
322. Rockfield Bl.	w/o Lake Forest Dr.	66.3	66.3	0.0	NO
323. Rockfield Bl.	w/o Ridge Route Dr.	67.3	67.3	0.0	NO
324. Rockfield Bl.	e/o Ridge Route Dr.	67.3	67.3	0.0	NO
325. Rockfield Bl.	e/o El Toro Rd.	66.5	66.5	0.0	NO
326. Roosevelt	w/o Jeffrey Rd.	64.5	64.5	0.0	NO
327. Roosevelt	e/o Jeffrey Rd.	67.5	67.6	0.1	NO
328. Roosevelt	w/o Sand Canyon Av.	63.7	63.7	0.0	NO
329. Sand Canyon. Av.	n/o Irvine Bl.	68.7	68.7	0.0	NO
330. Sand Canyon. Av.	s/o Irvine Bl.	70.7	70.7	0.0	NO
331. Sand Canyon. Av.	n/o Trabuco Rd.	70.1	70.1	0.0	NO
332. Sand Canyon. Av.	s/o Trabuco Rd.	77.8	77.7	-0.1	NO
333. Sand Canyon. Av.	s/o Roosevelt	78.0	78.0	0.0	NO
334. Sand Canyon. Av.	n/o I-5 NB Ramps	78.7	78.7	0.0	NO
335. Sand Canyon. Av.	b/w I-5 SB Ramps and Burt Rd.	72.8	72.9	0.1	NO
336. Sand Canyon. Av.	b/w Burt Rd. and Oak Cyn./Laguna Cyn. Rd.	72.9	72.9	0.0	NO
337. Sand Canyon. Av.	n/o ICD	71.9	72.0	0.1	NO
338. Sand Canyon. Av.	s/o Waterworks Wy.	71.5	71.5	0.0	NO

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*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? ²
		2011 Approved Project ¹	2012 Modified Project ¹	Modified Project Contribution	
339. Sand Canyon. Av.	s/o Barranca Pkwy.	71.5	71.6	0.1	NO
340. Sand Canyon. Av.	b/w Alton I-405 NB Ramps	71.8	71.8	0.0	NO
341. Santa Maria Av.	s/o Moulton Pkwy.	63.0	63.0	0.0	NO
342. Santa Maria Av.	e/o Laguna Canyon Rd.	59.8	59.8	0.0	NO
343. Santiago Canyon Rd.	e/o SR-241 NB Ramp	67.2	67.3	0.1	NO
344. Scientific Wy.	s/o ICD	56.7	56.7	0.0	NO
345. Spectrum	w/o Fortune Dr.	53.9	54.1	0.2	NO
346. Sterling	b/w Rockfield Bl and Barranca Pkwy	55.1	n/a	n/a	n/a
347. Technology Dr.	e/o Barranca Pkwy.	67.5	67.6	0.1	NO
348. Technology Dr.	w/o Barranca Pkwy.	66.4	66.4	0.0	NO
349. Technology Dr.	e/o Laguna Canyon Rd.	65.7	65.6	-0.1	NO
350. Toledo Wy.	e/o Alton Pkwy.	61.1	62.4	1.3	NO
351. Toledo Wy.	w/o Lake Forest Dr.	61.3	61.5	0.2	NO
352. Toledo Wy.	w/o Ridge Route Dr.	60.5	60.4	-0.1	NO
353. Toledo Wy.	e/o Ridge Route Dr.	62.6	62.6	0.0	NO
354. Trabuco Rd.	b/w Culver Dr. and I-5 NB Ramps	70.2	70.3	0.1	NO
355. Trabuco Rd.	e/o I-5 NB Ramps	67.7	67.8	0.1	NO
356. Trabuco Rd.	w/o Jeffrey Rd.	67.1	67.2	0.1	NO
357. Trabuco Rd.	e/o Jeffrey Rd.	67.2	67.3	0.1	NO
358. Trabuco Rd.	e/o Sand Canyon	68.5	68.4	-0.1	NO
359. Trabuco Rd.	e/o Bake Pkwy.	69.3	69.3	0.0	NO
360. Trabuco Rd.	b/w Lake Forest Ridge Route Dr.	70.4	70.4	0.0	NO
361. Trabuco Rd.	w/o El Toro Rd.	70.9	70.9	0.0	NO
362. Trabuco Rd.	e/o El Toro Rd.	67.3	67.3	0.0	NO
363. Trabuco Rd.	n/o Alicia Pkwy.	67.8	67.7	-0.1	NO
364. Trabuco Rd.	s/o Alicia Pkwy.	64.9	64.9	0.0	NO
365. Tustin Ranch Rd.	w/o Jamboree	65.6	65.5	-0.1	NO

5. Environmental Analysis

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*Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts*

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?²</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
366. Tustin Ranch Rd.	s/o Portola Pkwy.	69.8	69.8	0.0	NO
367. Tustin Ranch Rd.	n/o La Colina Dr.	69.8	69.8	0.0	NO
368. Tustin Ranch Rd.	s/o Irvine Bl.	69.4	69.3	-0.1	NO
369. University Dr.	b/w I-405 SB Ramps and Michelson Dr.	73.4	73.4	0.0	NO
370. Walnut Av.	w/o Jamboree	69.1	69.1	0.0	NO
371. Walnut Av.	e/o Jamboree	69.3	69.3	0.0	NO
372. Walnut Av.	w/o Culver Dr.	68.5	68.6	0.1	NO
373. Walnut Av.	e/o Culver Dr.	68.5	68.5	0.0	NO
374. Walnut Av.	e/o Yale Av.	65.5	65.5	0.0	NO
375. Walnut Av.	w/o Jeffrey Rd.	67.3	67.3	0.0	NO
376. Warner Av.	w/o Paseo Westpark	64.7	64.8	0.1	NO
377. Warner Av.	w/o Culver Dr.	64.6	64.6	0.0	NO
378. Warner Av.	b/w Culver W. Yale Loop	64.8	64.9	0.1	NO
379. W. Yale Loop	s/o Barranca Pkwy.	62.4	62.5	0.1	NO
380. W. Yale Loop	s/o Alton Pkwy.	65.3	65.3	0.0	NO
381. Yale Av.	b/w Portola and Arborwood	57.1	57.1	0.0	NO
382. Yale Av.	b/w Park Pl. and Irvine Bl.	65.1	65.1	0.0	NO
383. Yale Av.	n/o Bryan Av.	63.7	63.7	0.0	NO
384. Yale Av.	n/o Trabuco Rd.	64.3	64.4	0.1	NO
385. Yale Av.	n/o Walnut Av.	64.5	64.6	0.1	NO
386. Yale Av.	s/o Walnut Av.	65.1	65.2	0.1	NO
387. Yale Av.	b/w Deerfield Dr. and ICD	65.5	65.5	0.0	NO
388. Yale Av.	b/w ICD and Yale Lp.	64.8	64.9	0.1	NO
389. Thomas	n/o Muirlands Bl.	52.5	52.5	0.0	NO
390. Thomas	s/o Muirlands Bl.	59.1	59.7	0.6	NO
391. Irvine Bl.	e/o Fairbanks	72.1	72.0	-0.1	NO
392. Fairbanks	e/o Alton Pkwy.	59.1	59.8	0.7	NO
393. Fairbanks	w/o Alton Pkwy.	55.9	59.7	3.8	NO
394. Fairbanks	s/o Astor St.	50.2	56.8	6.6	NO

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Table 5.8-10
Post-2030 With 2012 Modified Project Option 2
Off-Site Project Related Traffic Noise Impacts

<i>Roadway</i>	<i>Segment</i>	<i>CNEL at 100 Feet (dBA)</i>			<i>Potential Significant Impact?²</i>
		<i>2011 Approved Project¹</i>	<i>2012 Modified Project¹</i>	<i>Modified Project Contribution</i>	
395. Fairbanks	w/o Irvine Bl.	59.9	64.1	4.2	NO

Source: Noise Study prepared by Urban Crossroads, Inc., June 2012 (see Appendix G of this DSEIR).

Notes: n/o = north of; s/o = south of; b/w = between; SB = southbound; NB = northbound

¹ 2012 Modified Project Option 2.

² A significant impact is considered to occur when resulting noise levels exceed 65 dBA CNEL and the project creates an increase greater than 1.5 dBA.

³ n/a=Not available, because it is an existing segment that is not part of the 2012 Modified Project.

Off-site Traffic-Related Noise Impact Summary

Table 5.8-11 presents a summary of the unmitigated off-site traffic-related exterior noise impacts for the 395 study area roadway segments analyzed. For both the 2011 Approved Project and the 2012 Modified Project Options 1 and 2, a total of 10 segments are expected to experience an unmitigated exterior noise level that exceeds 75 dBA CNEL at a distance of 100 feet from centerline. The unmitigated 70 dBA CNEL exterior noise level is expected to be exceeded on a total of 135 segments for the 2011 Approved Project, on 137 segments for the 2012 Modified Project Option 1, and on 137 segments for the 2012 Modified Project Option 2 within the study area. The unmitigated 65 dBA CNEL exterior noise level is expected to be exceeded on 321 segments for the 2011 Approved Project, and on 322 segments for the 2012 Modified Project for both Option 1 and Option 2.

The three of the 395 roadway segments that are expected to experience a 2012 Modified Project related noise level increase greater than 1.5 dBA CNEL are located on Fairbanks near the Proposed Project Site entrance at Astor. However the overall noise levels on those three segments will not exceed the 65 dBA significance threshold, and are located within the Tri-Pointe Business Park, outside the noise sensitive areas. For the remaining 392 roadway segments evaluated, off-site traffic noise level impacts do not exceed the screening significance threshold. Therefore, the 2012 Modified Project's traffic-related noise impacts on the surrounding communities will be less than significant. The 2012 Modified Project will not create a substantial permanent increase in exterior or interior traffic noise levels or expose persons to noise levels in excess of the exterior or interior noise level standards established in the City's Noise Ordinance and the Noise Element of the City's General Plan.

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*Table 5.8-11
Off-Site Traffic-Related Exterior Noise Impact Analysis Summary*

<i>Condition</i>	<i>Scenario</i>	<i>Number of Segments Analyzed</i>	<i>Number of Segments Exceeding¹</i>			<i>Number of Segments With Potential Significant Impact²</i>
			<i>75 dBA CNEL</i>	<i>70 dBA CNEL</i>	<i>65 dBA CNEL</i>	
General Plan Buildout	2011 Approved Project (Baseline)	395	10	135	321	–
	2012 Modified Project (Option 1)		10	137	322	0
	2012 Modified Project (Option 2)		10	137	322	0

Source: Noise Study prepared by Urban Crossroads, Inc., June 2012 (see Appendix G of this DSSEIR).

¹ Segments exceeding the off-site unmitigated exterior noise levels estimated at a distance of 100 feet from the roadway centerline.

² Roadway segments experiencing an unmitigated project-related traffic noise level increase of greater than 1.5 dBA.

2012 Modified Project with Optional Conversion

The 2012 Modified Project includes an option (in addition to Option 1 and 2 above) to convert up to 535,000 square feet of the proposed non-residential Multi-Use intensity to residential intensity for up to an additional 889 dwelling units within District 6 and Lot 48 of 2nd Amended VTTM 17008, and up to 311 DB units granted pursuant to state law. The optional conversion would result in a maximum of 5,806 additional dwelling units, including DB Units, as compared to the 2011 Approved Project for a total of 10,700 dwelling units. Although minor changes in roadway volumes on specific segments could result from this option, these changes would not significantly alter the projected noise levels identified herein. A 3dBA increase in noise volumes, which is the threshold for being perceptible to the human ear, would require a doubling of traffic on a specific roadway segment. Because of the proposed restriction on conversion of Multi Use and the trip limitation set forth in the zoning code, a doubling of traffic volumes on a roadway segment would not occur even if one were to include the DB Units which are not subject to the trip limit. In addition, PPP 8-2 requires submittal of a final acoustical report to demonstrate that the development will be sound attenuated against present and projected noise levels on-site including stationary, roadway, aircraft, helicopter, and railroad noise to meet City interior and exterior noise standards. Therefore, the 2012 Modified Project with Optional Conversion is not anticipated to result in any significant noise impacts.

IMPACT 5.8-2 ***LIKE THE 2011 APPROVED PROJECT, STATIONARY SOURCES OF NOISE GENERATED BY THE 2012 MODIFIED PROJECT WOULD COMPLY WITH THE CITY'S MUNICIPAL CODE AND WOULD NOT SUBSTANTIALLY INCREASE AMBIENT NOISE LEVELS AT SENSITIVE RECEPTORS PROXIMATE TO THE PROPOSED PROJECT SITE. [IMPACTS N-1 AND N-3]***

Impact Analysis:

Project-related stationary source noise impacts would include activities associated with commercial and retail uses such as, the loading and unloading of the trucks at the loading docks and storage areas, trash compactors and rooftop air-conditioning systems. In addition to the stationary source noise impacts

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generated by the commercial and retail land uses, stationary source noise will also be generated by the proposed residential land uses. The stationary source activities, related to residential land uses, generally includes air conditioners, yard care equipment, trash trucks, delivery vehicles, street sweepers, and outdoor neighborhood recreation activities. The stationary-source noise impacts expected within the 2012 Modified Project are consistent with those identified in the 2011 Approved Project because the same types of urban uses are proposed by the 2012 Modified Project. Additionally, noise associated with these sources is not expected to exceed the City's noise standards and in some cases, such as with certain neighborhood park activities, may be considered exempt.

However, with the exterior noise mitigation included in Mitigation Measure N-1 (see below) that has been adopted in the MMRP for the 2011 Approved Project and is incorporated into the 2012 Modified Project, which requires a noise study to be prepared prior to obtaining building permits for the project to specify noise mitigation measures to ensure that the exterior noise requirements (65 dBA CNEL) of the City's Noise Ordinance will be met, the 2012 Modified Project's impacts concerning stationary noise and noise-sensitive receptors would be less than significant.

Interior Traffic-Related Noise Impacts

To satisfy the City's 45 dBA CNEL interior noise level criterion, it is likely that residences on most lots facing major highways would be required to maintain a windows closed condition and to include a means of mechanical ventilation (e.g. air conditioning), in combination with standard building construction that includes dual-glazed windows; some residences may require upgraded dual-glazed windows.

However, with the interior noise mitigation measures outlined in Mitigation Measure N-1 from the 2011 Approved Project, which is incorporated into the 2012 Modified Project, future noise levels at the 2012 Modified Project's residential units would be reduced so that they would not exceed the City's 45 dBA CNEL interior noise standard. Specific window recommendations will be made once final architectural plans are available and detailed interior noise reduction calculations can be made based on actual building assembly details. Additionally, as stated in Mitigation Measure N-1, prior to the issuance of building permits for lots facing or located near major highways such as Irvine Boulevard, the project applicant shall provide a final noise study to the Director of Community Development that demonstrates how the exterior and interior noise requirements (65 dBA CNEL and 45 dBA CNEL, respectively) of the City's Noise Ordinance will be met.

IMPACT 5.8-3 CONSTRUCTION-RELATED ACTIVITIES OF THE 2012 MODIFIED PROJECT WOULD NOT RESULT IN A SUBSTANTIAL INCREASE IN TEMPORARY CONSTRUCTION NOISE AS COMPARED TO THE 2011 APPROVED PROJECT. [IMPACT N-4]

Impact Analysis: Construction noise creates a temporary intermittent impact on ambient noise levels in the vicinity of the construction. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators, can reach high levels. Grading activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours.

The 2011 Certified EIR concluded that the 2011 Approved Project would not result in any significant construction noise impacts. The results of the construction noise analysis indicated that the 2012 Modified Project's off-site construction noise levels would range from 77.5 to 89.4 dBA L_{ea} at a distance of 100

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feet. While the 2011 Certified EIR study included a detailed analysis of the potential temporary construction noise impacts, the City does not regulate construction activities under its Noise Ordinance so long as those activities occur only during the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday and from 9:00 a.m. to 6:00 p.m. on Saturdays, absent a grant of a temporary waiver. The 2011 Approved Project includes project design features to reduce noise impacts from construction activities adjacent to any developed/occupied noise sensitive land uses, including submission of a construction-related noise mitigation plan and proposed haul routes to the City for review and approval.

Construction Noise Levels

In January 2006, FHWA published a national database of construction-equipment-reference noise emission levels. This database, which is included as part of the FHWA's Roadway Construction Noise Model ("RCNM"), provides a comprehensive list of the noise generating characteristics for specific types of construction equipment (database provided in Appendix G of this DSSEIR). In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation. Noise levels generated by heavy construction equipment can range from approximately 70 dBA to in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 78 dBA measured at 50 feet from the noise source to the receptor would be reduced to 72 dBA at 100 feet from the source to the receptor, and would be further reduced to 66 dBA at 200 feet from the source to the receptor.

To identify the potential construction noise level impacts of the 2012 Modified Project, a detailed noise analysis was performed using information related to the 2012 Modified Project assumptions regarding equipment type, quantity, and typical utilization at full power, the hours of operation for of the 2012 Modified Project and construction-related activity type (see noise technical report in Appendix G). The mix of equipment type and quantity is based on the same estimates as those used in the *Air Quality Technical Report for the Heritage Fields El Toro, LLC* prepared by ENVIRON, dated May 2012. To estimate the construction noise levels by phase, the construction information was used in conjunction with the FHWA's RCNM to develop the anticipated noise levels shown below in Table 5.8-12.

Table 5.8-12
2012 Modified Project Construction Noise Impact Analysis Summary^{1,2}

<i>Construction-Related Activity Noise Level Impacts at 100 feet (dBA L_{eq})</i>					<i>Maximum Reference Noise Level</i>
<i>Demolition</i>	<i>Site Preparation</i>	<i>Grading</i>	<i>Paving</i>	<i>Building Construction/ Coating</i>	
88.3	82.6	89.4	82.3	86.3	89.4

Source: Noise Study prepared by Urban Crossroads, Inc., June 2012 (see Appendix G of this DSSEIR).

¹ Noise levels at a distance of 100 feet from construction activity. Actual distance to the off-site noise sensitive receptors will vary by District and will not be closer than 100 feet.

² Construction noise is temporary, intermittent and of short duration, and will not present any long-term impacts. It is expected that receptors located near each District during construction activities will experience temporary, short-term, readily perceptible noise levels.

As shown in Table 5.8-12, the results of the construction noise analysis indicate that the 2012 Modified Project's construction noise levels would range from 82.3 to 89.4 dBA L_{eq} at a distance of 100 feet from the center of construction activity. As the nearest off-site noise sensitive receptors will vary by District

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and will not be closer than 100 feet away, these noise levels provide an estimate of the most conservative maximum noise levels possible at a distance of 100 feet from the Proposed Project Site boundary. As these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance, the average noise levels at a given receptor would be much lower as construction equipment moves around the site. Each construction-related activity is described in more detail below. The detailed construction noise calculations for each activity are provided in Appendix G of this DSEIR.

Demolition

During this phase of construction, the main emphasis will be on removal of the existing runways and other existing buildings and structures. Equipment used during demolition activities includes concrete and industrial saws, excavators, and rubber tire dozers.

Table 5.8-12 shows that during demolition, noise levels at noise-sensitive receptors at a distance of 100 feet are estimated at 88.3 dBA L_{eq} .

Site Preparation

During this phase of construction, the main emphasis will be on removal of non-structural materials and the import and export of dirt where necessary. Equipment used during site preparation activities includes rubber tire dozers, tractors, loaders, and backhoes. Table 5.8-12 shows that during site preparation activities, noise levels at noise-sensitive receptors at a distance of 100 feet are estimated at 82.6 dBA L_{eq} .

Grading

Equipment used during grading activities includes excavators, graders, rubber tire dozers, scrapers, tractors, loaders, and backhoes. Table 5.8-12 shows that during grading activities, noise levels at noise-sensitive receptors at a distance of 100 feet are estimated at 89.4 dBA L_{eq} . Grading activities are generally expected to produce the highest construction-related noise impacts.

Paving

During this phase of construction, the main emphasis will be on paving roadways, parking lots, and other surfaces. Equipment used during paving activities includes pavers, rollers, and other miscellaneous paving equipment. Table 5.8-12 shows that during paving activities, noise levels at the sensitive noise-receptor at a distance of 100 feet are estimated at 82.3 dBA L_{eq} .

Building Construction and Coating

During this phase of construction, the main emphasis will be on the construction of buildings and homes. Equipment used during building construction and coating activities includes cranes, forklifts, generators, tractors, loaders, backhoes, welders, and air compressors. Table 5.8-12 shows that during building construction and coating activities, noise levels at the noise-sensitive receptors at a distance of 100 feet are estimated at 86.3 dBA L_{eq} .

Summary of Construction Noise Levels

While the City's Noise Ordinance does not specify a limit on construction noise levels, it does stipulate the days and hours during which construction activities may occur and when construction would not be allowed unless a temporary waiver is requested and granted. As with the 2011 Approved Project, construction activities associated with the 2012 Modified Project will be subject to the limitations and

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requirements of Section 6-8-205(a) of the City's Noise Ordinance, which is incorporated into PPP 8-1 above. As outlined in Section 6-8-205(a), construction activities may occur between the hours of 7:00 AM and 7:00 PM Monday through Friday, and 9:00 AM and 6:00 PM on Saturday. No construction activities are permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative. Trucks, vehicles, and equipment that are used at the Proposed Project Site or that are making, or are involved with, material deliveries, loading, or transfer of materials, equipment service, maintenance of any devices or appurtenances for or within the Proposed Project Site are not permitted to be operated or driven on Irvine's streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted is required to take any impact on the community into consideration. No construction activity is permitted outside of these hours except in emergencies including maintenance work on Irvine rights-of-way that might be required.

Additionally, construction noise would be temporary, intermittent and of short duration, and would not create any long-term impacts. While the noise-level impacts presented for the 2012 Modified Project are a "worst-case" scenario and may at times be audible over traffic-related noise level impacts surrounding each District, these levels are not expected to be of a continuous nature.

Furthermore, to minimize the potential construction noise impacts associated with the 2012 Modified Project and to ensure that the greatest distance between noise sources and sensitive receptors during construction activities are achieved, the project applicant or its successor will be required to implement PPPs 8-1 and 8-3 and PDF 8-1 outlined above.

Lastly, the 2012 Modified Project would have a similar area of disturbance and a similar mix of construction equipment as the 2011 Approved Project. Peak noise levels would occur during grading, which would not change for the 2012 Modified Project, as compared to the 2011 Approved Project. For all of these reasons, and with implementation of PPPs 8-1 and 8-3 and PDF 8-1, the 2012 Modified Project's construction noise impacts to off-site noise-sensitive receptors, as compared to those of the 2011 Approved Project, would be less than significant.

5.8.5 Cumulative Impacts

Cumulative noise impacts occur when multiple sources of noise, though individually not substantial, combine and lead to excessive cumulative noise exposure at noise-sensitive uses.

Operational Mobile-Source Noise

Traffic volumes and traffic noise increases on local roadways in the vicinity of the Proposed Project Site are shown in Table 5.8-8, *General Plan Buildout (Post-2030) Off-Site Average Daily Traffic Volumes (1,000s)*, Table 5.8-9, *General Plan Buildout (Post-2030) With 2012 Modified Project Option 1 Off-Site Project-Related Traffic Noise Impacts*, and Table 5.8-10, *General Plan Buildout (Post-2030) With 2012 Modified Project Option 2 Off-Site Project-Related Traffic Noise Impacts*. The difference between the "2011 Approved Project" and "2012 Modified Project" scenarios represents the 2012 Modified Project's contribution to cumulative roadway noise increases.

Project-related cumulative noise impacts could occur if the 2012 Modified Project contributes to substantial (1.5 dBA or more) cumulative noise increases resulting in noise levels above 65 dBA CNEL at a noise-sensitive receptor. However, as demonstrated in Tables 5.8-9 and 5.8-10, that circumstance would

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not occur on any of the roadway segments analyzed, and thus no significant cumulative noise impacts would occur.

Operational Stationary Source Noise

Unlike transportation noise, the effects of which can extend well beyond the limits of the Proposed Project Site, stationary source noise generated by the 2012 Modified Project is limited to impacts to sensitive receptors immediately adjacent to or within the Proposed Project Site. As discussed above, project-related sources of stationary noise would include activities associated with commercial and retail uses, including parking lots, mechanical equipment, and loading/unloading activities, and activities related to residential uses, including air conditioners, yard care equipment, and outdoor activities. Although it is not possible to calculate the specific localized noise impacts from these uses in the absence of final site plans, no significant impacts are anticipated to occur, as stationary source noise is regulated by the City through the City's Municipal Code to ensure that they are controlled to acceptable levels. Future projects within the Proposed Project Site and other off-site projects within the vicinity of the Proposed Project Site will be required to comply with the City noise regulations or those of other adjacent jurisdictions, which reduce significant impacts to less than significant levels. Consequently, like the 2011 Approved Project, the 2012 Modified Project would not result in stationary source cumulative noise impacts.

Construction Noise

Like operational stationary source noise, cumulative construction noise impacts and vibration are confined to a localized area. Consequently, cumulative impacts would only occur if other projects are being constructed in the vicinity of the Proposed Project Site within the same time frame as construction of the 2012 Modified Project so that they would contribute to the local ambient noise environment. There are two potential projects in the vicinity of the Proposed Project Site: PA 6 and PA 40 and there is some possibility that simultaneous grading could occur. However, this is unlikely since there are currently no maps filed for development of the portion of PA 6 directly adjacent to District 8, and the grading of District 8 has almost been completed. Moreover, there are no existing homes in the vicinity of those areas in PA 6 and PA 40 where simultaneous grading and construction (specifically District 1 and District 7) could occur. Additionally, based on noise levels that would be generated by construction activities at the Proposed Project Site, the duration of construction activities (which varies by individual development project), and the proximity of sensitive receptors, construction noise from the 2012 Modified Project would not substantially elevate ambient noise levels nor significantly contribute to the cumulative noise environment. Furthermore, to minimize the potential construction noise impacts associated with the 2012 Modified Project and to ensure that the greatest distance between noise sources and sensitive receptors during construction activities are achieved, the project applicant or its successor will be required to adhere to PPPs 8-1 and 8-3 and PDF 8-1 outlined above. Future projects within the Proposed Project Site and other off-site projects within the vicinity of the Proposed Project Site will be required to comply with the City noise regulations or those of other adjacent jurisdictions, which reduce potential impacts to a less than significant level. Therefore, construction-related noise impacts would be controlled within the areas close to each construction site and would therefore be unlikely to combine with noise generated from other construction sites.

5.8.6 *Applicable Mitigation Measures from the 2011 Certified EIR*

Each mitigation measure related to noise that was specified in the 2011 Certified EIR and adopted in the MMRP for the 2011 Approved Project is set forth below. These mitigation measures are incorporated into the 2012 Modified Project.

N-1 Prior to the issuance of building permits for lots facing or located near major highways such as Irvine Boulevard, the project applicant or its successor shall provide a final noise study to the Director of Community Development that demonstrates how the exterior and interior noise requirements (65 dBA CNEL and 45 dBA CNEL, respectively) of the City of Irvine General Plan Noise Element will be met. To attain the exterior and interior noise requirements, the final noise study shall include, but not be limited to the following measures, in addition to such measures as the final noise study determines are required and shall be shown on the final map:

Exterior

- Provide a minimum six-foot high noise barrier for single-family detached residences shown in Figures 5.7-3 through 5.7-7 of this DSEIR.

Interior

- Provide a “windows closed” condition, requiring a means of mechanical ventilation (e.g., air conditioning) for all units.
- Provide standard and upgraded dual-glazed windows with a minimum Sound Transmission Coefficient rating of 26. Specific window recommendations shall be made once final architectural plans are available and detailed interior noise reduction calculations can be calculated based on actual building assembly details.

N-2 Prior to authorization to use, occupy and/or operate any multi-family residential unit, the project applicant or its successor shall submit evidence to the satisfaction of the Director of Community Development that occupancy disclosure notices for residential units with balconies that do not meet the City’s exterior noise standard of 65 dBA CNEL will be provided to all future tenants pursuant to the City’s Noise Ordinance.

5.8.7 *Level of Significance Before Additional Mitigation*

Upon implementation of regulatory requirements, PPPs and PDFs, and the mitigation measures adopted in the MMRP for the 2011 Approved Project which are listed above, Impacts 5.8-1, 5.8-2, and 5.8-3 would be less than significant for the 2012 Modified Project, as compared to the 2011 Approved Project.

5.8.8 *Additional Mitigation Measures for the 2012 Modified Project*

No additional mitigation measures are required because the mitigation measures identified in the 2011 Certified EIR and associated MMRP would reduce noise impacts of the 2012 Modified Project to a level of less than significant.

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5.8.9 Level of Significance After Additional Mitigation

With implementation of the existing regulations, PPPs and mitigation measures outlined above from the 2011 Approved Project, potential impacts of the 2012 Modified Project associated with noise would be reduced to a level that is less than significant. Therefore, no significant impacts relating to noise have been identified.

5.7 LAND USE AND PLANNING

This section of the DSSEIR evaluates the potential impacts to land use in Irvine and the region from implementation of the 2012 Modified Project. Land use impacts can be either direct or indirect. Direct impacts are those that result in land use incompatibilities, division of neighborhoods or communities, or interference with other land use plans, policies, or regulations, including habitat or wildlife conservation plans. This section focuses on direct land use impacts. Indirect impacts are secondary effects resulting from land use policy implementation, such as an increase in demand for public utilities or services, or increased traffic on roadways. Indirect impacts are addressed in other sections of this DSSEIR.

5.7.1 Environmental Setting

Regional and Local Setting

The Proposed Project Site is described in detail in Chapter 3, *Project Description*. Figure 3-1 depicts the location of the Proposed Project Site in a regional context and Figure 3-2 shows its local context. The boundaries of Existing PA 51 generally include the Eastern Transportation Corridor to the west, the Foothill Transportation Corridor to the north, the Southern California Regional Rail Authority (“SCRRA”) rail lines to the south, and Irvine Boulevard and the stormwater channel near Alton Parkway to the east. Existing PA 51 abuts Existing PA 30 and PA 32 to the south, Irvine Spectrum 2 - PA 35 to the east, and PAs 9 and 40 to the west. The boundaries of Existing PA 30 generally include I-5 to the south, the SCRRA rail lines to the north, and the Irvine Spectrum to the east and west (Irvine Spectrum 2 - PA 35, and Irvine Spectrum 3 - PA 32).

Existing Land Uses on the Proposed Project Site

The Proposed Project Site currently contains a number of existing buildings previously associated with the former MCAS El Toro. At the time this document was prepared, 180 buildings (both residential and non-residential) and a portion of the pre-existing runways still remain on the site. The currently existing facilities and uses within the Proposed Project Site include recreational vehicle storage and agricultural and nursery operations. The 2011 Certified EIR also described interim activities that might occur on the Proposed Project Site, consistent with a provision in the City’s Zoning Ordinance, including short-term use of the land or existing buildings. Currently, there are offices occupied by the Orange County Great Park Corporation (“GPC”) and the Orange County Great Park Western Sector Development. Heritage Fields has started grading and site preparation activities in District 8.

Existing Surrounding Land Uses

Major roadways bordering the Proposed Project Site include Sand Canyon Avenue to the west, Portola Parkway and Irvine Boulevard to the north, and Bake Parkway to the east. The Irvine Station is adjacent to the SCRRA Metrolink tracks, which traverse the Proposed Project Site and separate Existing PAs 30 and 51. Surrounding the Proposed Project Site are nonresidential and mixed land uses to the north, south, east and west. An aerial photograph of the Proposed Project Site and its surroundings are depicted in Figure 3-3 of this DSSEIR.

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Applicable Plans and Regulations

Regional and local laws, regulations, plans, and guidelines that are potentially applicable to the 2012 Modified Project are summarized below.

Local

City of Irvine General Plan

Future development of all land in Irvine is guided by the City's General Plan. The General Plan consists of a series of state-mandated and optional elements to direct the City's physical, social, and economic growth. Elements in the City of Irvine General Plan (adopted in 2000 and subsequently amended) are Land Use, Circulation, Housing, Cultural Resources, Noise, Seismic, Public Services and Facilities, Integrated Waste Management, Energy, Safety, Parks and Recreation, Conservation and Open Space, and Growth Management. A description of these elements and their components is provided below, and the 2012 Modified Project's consistency with the various goals and policies of the elements of the General Plan is addressed later in this section in Table 5.7-1.

Land Use Element. The Land Use Element seeks to protect and enhance the quality of life in the community. Land use policies determine how land is developed in the community, ranging from an office building or a single family home, to the number of parks and open spaces in the City. Land use policies also guide and resolve many land issues and constraints in order to define the quality of life in the City. The General Plan land use designation of the Proposed Project Site is "Orange County Great Park."

Circulation Element. This element describes the nature and extent of the existing circulation network, and identifies trends, issues, and public policies relating to the development of a balanced, multimodal circulation system for Irvine. Four different types of systems compose Irvine's circulation system: air, road, public transit, and trails. The Circulation Element is designed to:

- Create a hierarchy of roadways.
- Reinforce boundaries of PAs.
- Respond to conservation, noise, air pollution, and wildlife preservation policies.
- Satisfy City General Plan and Strategic Business Plan objectives.

Housing Element. The Housing Element sets forth the City's five-year strategy to preserve and enhance the community's character, expand housing opportunities for all economic segments, and provide guidance for local government decision-making in all matters related to housing. The current Housing Element was approved by the Irvine City Council on January 24, 2012. The Housing Element consists of the following major components:

- **Housing Needs Assessment.** An analysis of the demographic, household, and housing market characteristics and trends
- **Special Housing Needs.** A discussion of persons with special circumstances, such as persons with disabilities, senior households, large households, single-parent households, the homeless, and farm workers.
- **Market and Governmental Constraints.** A review of potential market, governmental, and other constraints to meeting the identified housing needs.

- **Financial and Administrative Housing Resources.** An evaluation of the land, financial, and other resources available to address housing needs.
- **Housing, Goals Policies, and Programs.** A set of objectives and policies to address the housing needs.

Seismic and Safety Elements. These elements identify seismic and safety hazards and discuss strategies for reducing disasters. Due to the close relationship between the Seismic and Safety Elements, they are considered together in identifying the location and type of development permitted in the City, in developing building standards, and in providing services to City residents. An example of such services is community safety programs that reduce the potential for loss of life, injuries, and property damage associated with natural and man-induced hazards. These hazards include fire, floods, geologic hazards, and aircraft operations.

Cultural Resources Element. This element recognizes the importance of historical, archaeological, and paleontological resources in Irvine and establishes a process for their early identification, consideration, and where appropriate, preservation.

Noise Element. Noise, as defined in this element, is generally unwanted sound which is considered unpleasant and bothersome. Unwanted noise can affect people both physically and psychologically. People are usually more sensitive to noise during the evening and nighttime because of reduced activities, fewer noise-emitting sources, and the need for rest. Land uses in which people are especially sensitive to noise include residential, convalescent and rest homes, hospitals, libraries, churches, and schools. This element provides guidelines for minimizing noise impacts from various sources.

Public Services and Facilities Element. Public facilities are institutional responses to basic needs, such as health, education, safety, recreation, and worship. Examples of typical public facilities include churches, hospitals, and police stations. This element provides policies and criteria for the development of various types of community facilities, their relationships to one another, and their location to serve the needs and desires of the community.

Integrated Waste Management Element. This element serves to “encourage solid waste reduction and provide for the efficient recycling and disposal of refuse and solid waste material without deteriorating the environment.” The collection and disposal components of waste management are further described as follows:

- **Solid, Nonhazardous Waste.** Solid waste collection is usually accomplished by picking up refuse at the sources via collection vehicles, separating out recyclable materials at transfer stations, and then transporting the residual material. Solid wastes can be disposed of in several ways, such as sanitary landfill, recycling, waste-to-energy, and composting.
- **Liquid, Nonhazardous Waste.** Liquid, nonhazardous wastes are usually collected through a sewer system and treated at a wastewater treatment facility, with the liquid waste being disposed of in the ocean or treated for reuse as recycled water. The resulting sludge can be disposed of in a sanitary landfill, sludge farm, or eliminated through incineration.
- **Hazardous Waste.** Hazardous wastes are required by state law to be recycled, treated onsite, or treated at a designated waste treatment facility whereby hazardous materials are neutralized prior to final disposal. Liquid hazardous wastes are either treated at the waste source to neutralize

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hazardous components and then placed in the sewer system, or nontreated hazardous wastes are collected in specifically designed collection vehicles for ultimate disposal.

Energy Element. This element provides a basis for long-range planning. In addition, it summarizes information on energy supply and demand. The associated state and local objectives, when implemented, will result in efficient energy consumption by the City and its residents, businesses, and industries.

Parks and Recreation Element. A park is defined as any public or private land set aside for aesthetic, educational, recreational, or cultural use. The amount of parkland required for dedication is established at the time of subdivision approval through the implementation of the Irvine Subdivision Ordinance (Irvine Municipal Code § 5-5-101 et seq.). The City's public park system is divided into two categories: community parks and neighborhood parks. Neighborhood parks are further divided into public or private parks. This element establishes guidelines for the orderly development of Irvine's park and recreation facilities.

Conservation and Open Space Element. This element provides long-term guidance for the preservation of significant natural resources and open space areas. The value of this element is threefold. First, it provides mechanisms for ensuring balance between the urban and natural environments in Irvine. Second, it recognizes natural and man-made hazards that might affect the community if development were to occur. Finally, it provides specific policies and a program for preserving, managing, and using natural and man-made resources.

Growth Management Element. In November 1990, Orange County voters approved a Revised Traffic Improvement and Growth Management Ordinance. This ordinance imposed an increase to the retail sales tax by 0.5 cent for a 20-year period to be used for the funding of transportation-related improvements. To receive a portion of these revenues, the City must satisfy the requirements established by the Countywide Growth Management Program. The City's Growth Management Element comprises a series of objectives and implementing actions to carry out the goals of the County program and ensure that growth and development is based on the City's ability to provide an adequate circulation system and public facilities. The intent of the Growth Management Element is to establish the basic policy framework for future implementing actions and programs in a single General Plan element.

City of Irvine Zoning Classifications

The City's Zoning Ordinance ("Zoning Ordinance") establishes zone-specific development regulations, including, but not limited to, height limits, setback requirements, parking ratios, and other development standards. It is through the implementation of the Zoning Ordinance that long-term goals, objectives, and policies of the General Plan are implemented. The City establishes zoning regulations by PA and the 2012 Proposed Project Site is located in Existing PAs 30 and 51.

Per the City's Zoning Map and as shown in Figure 3-5, *Existing Zoning*, Existing PA 51 consists of six zoning designations, which include: 1.1 Exclusive Agriculture, 1.4 Preservation, 1.9 Orange County Great Park, 3.2 Transit Oriented Development, 6.1 Institutional, 8.1 Trails and Transit Oriented Development. Existing PA 30 consists of four zoning designations, including: 1.4 Preservation, 3.2 Transit Oriented Development, 4.3 Vehicle-Related Commercial, and 5.4B General Industrial. These zoning districts are described below in greater detail.

- **1.1 Exclusive Agriculture.** This land use category applies to land designated as agriculture in the City's General Plan. Only agriculture and accessory uses are permitted in this category.

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- **1.4 Preservation.** This land use category provides for the protection and maintenance of natural resources. These lands have been judged viable for permanent preservation in a natural state with little or no modification. Visually significant ridgelines, biotic communities of high significance, geological constraints and cultural resources are typical of lands in this category.
- **1.9 Orange County Great Park.** This land use category identifies lands suitable for active and passive recreational opportunities and activities for public use and enjoyment. The Orange County Great Park is a multi-destination facility that will include a variety of educational and recreational activities, including sports fields, museums, gardens, trails, wildlife habitat and many other public-oriented land uses.
- **3.2 Transit Oriented Development.** This land use category is consistent with the transit-oriented development area within the Orange County Great Park land use category as defined in the General Plan. Transit-oriented development encourages a diverse mix of higher-intensity commercial, office, residential and institutional uses in areas with high potential for enhanced transit and pedestrian activity. The category is intended to reduce reliance on the automobile by encouraging a compact mix of uses within the same site, including the integration of complementary uses within a single building. The development shall be designed to create a safe and pleasant pedestrian environment by providing amenities that support the use of transit, bicycles, and pedestrian facilities and by providing for a safe, pleasant, and convenient walking experience.
- **4.3 Vehicle-Related Commercial.** This land use category applies to commercial areas that are primarily designed to provide for the sale and servicing of, and parts for, automobiles and recreational vehicles.
- **5.4B General Industrial.** This land use category reserves an area for uses such as manufacturing, warehousing and service industries.
- **6.1 Institutional.** This category applies to land for public and quasipublic facilities such as churches, schools or utilities.
- **8.1 Trails and Transit Oriented Development.** This land use category allows for a mix of residential, commercial, recreational, and education uses that support the multi-use environment of the Orange County Great Park development.

Regional

Southern California Association of Governments

Orange County and Irvine are at the western edge of a six-county metropolitan region composed of Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial Counties. The Southern California Association of Governments (“SCAG”) serves as the federally recognized Metropolitan Planning Organization (“MPO”) for this southern California region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and serves as a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG also serves as the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the southern California region’s MPO, SCAG cooperates

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with the South Coast Air Quality Management District (“SCAQMD”), the California Department of Transportation (“Caltrans”), and other agencies in preparing regional planning documents. Orange County and its jurisdictions constitute the Orange County Subregion in the SCAG region. This subregion is governed by the Orange County Council of Governments (“OCCOG”). SCAG has developed plans to achieve specific regional objectives. The plans most applicable to the 2012 Modified Project are discussed below.

Regional Comprehensive Plan

The 2008 Regional Comprehensive Plan (“RCP”) is a major advisory plan prepared by SCAG that addresses important regional issues like housing, traffic/transportation, water, and air quality. The RCP serves as an advisory document to local agencies in the southern California region for their information and voluntary use in preparing local plans and handling local issues of regional significance.

The RCP presents a vision of how southern California can balance resource conservation, economic vitality, and quality of life. The RCP identifies voluntary best practices to approach growth and infrastructure challenges in an integrated and comprehensive way. It also includes goals and outcomes to measure progress toward a more sustainable region. The 2012 Modified Project’s consistency with the advisory and voluntary goals and policies of the 2008 RCP is analyzed in detail later in this section in Table 5.7-2.

Regional Transportation Plan

On April 4, 2012, SCAG adopted the 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) to help coordinate development of the region’s transportation improvements. The RTP is a long-range transportation plan that is developed and updated by SCAG every four years. The RTP provides a vision for transportation investments throughout the region. Using growth forecasts and economic trends that project out over a 20-year period, the RTP considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address regional mobility needs.

In 2008, California State Senate Bill 375 (SB 375) was enacted to reduce greenhouse gas (GHG) emissions from automobiles and light trucks through integrated transportation, land use, housing and environmental planning. To achieve the goal of reduced GHG emissions, the legislation requires MPOs throughout the state to include a new element in their RTPs called a Sustainable Communities Strategy (SCS). SCAG is responsible for developing the SCS for the SCAG region. Consistent with SB 375, SCAG has included an SCS in their 2012 RTP. The SCS integrates transportation, land use, housing, and environmental planning strategies with the goal of reducing regional GHG emissions.

An analysis of the 2012 Modified Project’s consistency with the applicable 2012 RTP/SCS goals is included later in this section in Table 5.7-3.

Compass Blueprint

In 2004, SCAG adopted the Compass Blueprint Strategy, which is the part of SCAG’s 2004 regional growth forecast policy that attempts to reduce emissions and increase mobility through strategic land use changes. Through extensive public participation and land use and transportation modeling and analysis, Compass Blueprint has resulted in a plan that identifies strategic growth opportunity areas (2% Strategy Opportunity Areas). Those areas represent roughly 2 percent of the land area in the SCAG six-county region, and are where Compass Blueprint will help cities and counties focus their energy to reap the

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maximum benefits from regional planning implemented in cooperation and partnership with the local community. The Compass Blueprint 2% Strategy is a guideline for how and where SCAG's Compass Growth Vision for southern California's future can be implemented toward improving mobility, livability, prosperity, and sustainability for local neighborhoods and their residents. Goals for the 2% Strategy Opportunity Areas include locating new housing near existing jobs and new jobs near existing housing, encouraging infill development, promoting development with a mix of uses, creating walkable communities, providing a mix of housing types, and focusing development in urban areas.

Portions of the Proposed Project Site are in a designated Compass 2% Strategy Opportunity Area (SCAG 2012). Although the Compass Blueprint is merely an advisory policy and cities are not required to be consistent with it, Table 5.7-4 below analyzes the 2012 Modified Project's consistency with the advisory Compass Blueprint 2% Strategy guidelines.

Orange County Sustainable Communities Strategy

In the SCAG region, SB 375 allows for a subregional council of governments and county transportation commission to work together to propose a subregional SCS. As one of these subregions, Orange County has prepared its own subregional SCS (OC SCS). It was prepared by the Orange County Council of Governments and the Orange County Transportation Authority, in collaboration with multiple Orange County stakeholders. The OC SCS has been integrated into SCAG's 2012 RTP/SCS described above.

Central to the OC SCS are the sustainability strategies identified to reduce GHG emissions. The strategies include both land use-related strategies and transportation system improvements. The 2012 Modified Project's consistency with the applicable sustainability strategies of the OC SCS is analyzed in detail later in this section in Table 5.7-5.

5.7.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- LU-1 Physically divide an established community.
- LU-2 Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- LU-3 Conflict with any applicable habitat conservation plan or natural community conservation plan.

Chapter 8, *Impacts Found Not to Be Significant*, substantiates the City's determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR) that the following impacts would not be significant for the 2012 Modified Project, as compared to the 2011 Approved Project: LU-1 and LU-3. Those impacts were analyzed in the 2011 Certified EIR and implementation of the changes proposed by the 2012 Modified Project would not change the conclusions of the 2011 Certified EIR.

Therefore, impacts LU-1 and LU-3 will not be addressed further in this document.

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5.7.3 The 2011 Approved Project

The 2011 Certified EIR concluded that the entitlements proposed as part of the 2011 Approved Project would ensure that development would remain consistent with the City's General Plan land use plan, goals and policies and the City's Zoning Ordinance. The 2011 Approved Project was also found to be consistent with SCAG's regional policies, as well as surrounding uses in the cities of Irvine and Lake Forest and with uses associated with the University of California's South Coast Research and Extension Center. Accordingly, the 2011 Certified EIR concluded that less than significant land use impacts would occur.

5.7.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

Several existing plans, programs, or policies (PPPs) that apply to the 2012 Modified Project are identified in other sections of Chapter 5 that help to reduce and avoid potential impacts related to land use and planning. These PPPs are identified in the consistency analysis below, where appropriate.

Project Design Features

Several project design features (PDFs) of the 2012 Modified Project that help to reduce and avoid potential impacts related to land use and planning are identified in other sections of Chapter 5 of this DSSEIR. These PDFs are identified in the consistency analysis below, where appropriate.

The following impact analysis addresses impacts that the Initial Study for the 2012 Modified Project disclosed could be potentially significant, as compared to the 2011 Approved Project. The potential impacts are identified in brackets after the impact statement.

IMPACT 5.7-1: IMPLEMENTATION OF THE 2012 MODIFIED PROJECT WOULD NOT BE IN CONFLICT WITH AN APPLICABLE ADOPTED LAND USE PLAN, POLICY, OR REGULATION. [IMPACT LU-2]

Impact Analysis: The 2012 Modified Project combines Existing PAs 30 and 51, and the approximately 11 acres between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard, into a single PA, to be designated as "Combined PA 51," so that the 2012 Modified Project will be a cohesive development governed by a unified set of land use and development regulations. In keeping with the goal of unified land use and development regulations, the development areas in District 6 (currently zoned 3.2 Transit Oriented Development), and in Districts 2 and 3 (currently zoned 3.2 Transit Oriented Development, 5.4 B General Industrial, and 4.3 Vehicle Related Commercial) would be rezoned to 8.1 Trails and Transit Oriented Development, consistent with the balance of the Heritage Fields Districts (see Figures 3-6, *Proposed Zone Changes*, and 3-7, *Proposed Zoning*).

The Approved Wildlife Corridor Feature is currently zoned 1.4 Preservation and would be rezoned to 8.1 Trails and Transit Oriented Development as part of 2012 Modified Project. As more fully described in Chapter 3, *Project Description*, of this DSSEIR, approximately 132-acres of the Approved Wildlife Corridor Feature is proposed to be relocated to the eastern edge of the Proposed Project Site, adjacent to Borrego Canyon Channel ("Relocated Wildlife Corridor Feature"). That location to which the Relocated Wildlife Corridor Feature would be moving is currently zoned 8.1 TTOD and 1.1 Exclusive Agriculture. With implementation of the 2012 Modified Project, the 132 acres of land underlying the portion of the

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Relocated Wildlife Corridor Feature that is proposed to be relocated would be rezoned to 8.1 Trails and Transit Oriented Development, and the 132 acres where the Relocated Wildlife Corridor Feature would be moved to would be rezoned as 1.4 Preservation. Finally, the 2012 Modified Project proposes that the City Parcels be rezoned from 3.2 Transit Oriented Development to 8.1 Trails and Transit Oriented Development.

The 2012 Modified Project proposes to amend General Plan Figure B-1, *Master Plan of Arterial Highways*, of the City's General Plan Circulation Element, and other General Plan maps as necessary, to eliminate the extension of Rockfield Boulevard from the Proposed Project Site boundary to Marine Way once the Orange County Transportation Authority (OCTA) has approved this amendment to the countywide Master Plan of Arterial Highways. Other proposed amendments to the General Plan and Zoning Ordinance are outlined in detail in Chapter 3, *Project Description*, of this DSSEIR.

General Plan Consistency Analysis

A detailed analysis of the 2012 Modified Project's consistency with the applicable goals and policies of the various elements of the General Plan is provided in Table 5.7-1, *General Plan Consistency Analysis*. The analysis in Table 5.7-1 concludes that the 2012 Modified Project would be consistent with the applicable goals and policies of the General Plan. The maximum number of residential units (up to 10,700 units when the optional conversion is included) that would be allowed on the Proposed Project Site, along with the other components of the 2012 Modified Project (e.g., General Plan Amendment, Zone Change) would not be detrimental to the public health, safety, or welfare or be in conflict with the goals or policies of the General Plan. The location of the additional 4,606 residential units (5,806 if the optional conversion is included) within the Proposed Project Site would only result in significant and unavoidable transportation or circulation system impacts if the adjacent cities that have control over implementing the identified improvements under their jurisdiction do not implement the proposed improvements that would mitigate those impacts. In accordance with General Plan Objective B-1(h and k), a traffic study was prepared (see Appendix K of this DSSEIR) for the 2012 Modified Project and is discussed in detail in Section 5.12, *Transportation and Traffic*, of this DSSEIR.

Zoning Ordinance Consistency Analysis

Per the City's Zoning Map and as shown in Figure 3-5, *Existing Zoning*, Existing PA 51 consists of six zoning designations, which include: 1.1 Exclusive Agriculture, 1.4 Preservation, 1.9 Orange County Great Park, 3.2 Transit Oriented Development, 6.1 Institutional, 8.1 Trails and Transit Oriented Development. Existing PA 30 consists of four zoning designations, including: 1.4 Preservation, 3.2 Transit Oriented Development, 4.3 Vehicle-Related Commercial, and 5.4B General Industrial.

As detailed above, the 2012 Modified Project would include various changes to the City's Zoning Ordinance which obviously are not consistent with the existing zoning and would therefore create a potential land use impact. Implementation of the proposed Zone Changes would bring the zoning into compliance. Moreover, as discussed below, all components of the 2012 Modified Project would be consistent with the underlying General Plan policies and the proposed Zone Change would further various objectives established by the City. Additionally, the Zoning Ordinance establishes zone-specific development regulations by zoning designation and PA, including height limits, setback requirements, landscape requirements, parking ratios, and other development standards. Implementation of the 2012 Modified Project would be required to adhere to the specific development regulations established for the applicable zoning designation. Therefore, no significant land use impacts related to the proposed Zone Change are anticipated.

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Table 5.7-1
General Plan Consistency Analysis

Applicable City of Irvine General Plan Policies	2012 Modified Project Consistency
Land Use Element	
Objective A-1: City Identity – Preserve and strengthen Irvine’s identity as a diverse and innovative community.	
<p>Policy (a): Develop identifiable City edges, pathways, entry points, and landmarks, and conserve visual resources along the scenic corridors which characterize Irvine (p. A-10).</p>	<p>Consistent: The 2012 Modified Project would contribute to City identity by providing a development that has its own unique characteristics while retaining cohesiveness with other developments in the vicinity. Implementation of the 2012 Modified Project’s subsequent Vesting Tentative Tract Maps, Master Plans, and Comprehensive Park Plans and Park Designs would set forth the distinctive elements associated with future development.</p> <p>Subsequent Vesting Tentative Tract Maps, Master Plans and Comprehensive Park Plan and Park Designs for the Proposed Project Site would be in compliance with City requirements and the adopted Master Landscape and Trails Plan and would involve the development of a number of key pathways and trails that are a part of the interconnected master trails plan of the Proposed Project Site and Great Park. Furthermore, implementation of the 2012 Modified Project would not preclude the establishment of potential landmarks within the Proposed Project Site. The zoning of the Proposed Project Site accommodates a number of existing facilities associated with the former MCAS El Toro, encouraging adaptive reuse wherever possible. For example, aviation hangars located in the southern portion of Existing PA 51 could be appropriate for reuse as warehousing, manufacturing, or motion picture production studios, museum, sports, cultural facilities, or other uses consistent with the zoning of the site.</p>
<p>Policy (b): Use building masses and landscaping to create a sense of unity for the various components throughout the City (p. A-10).</p>	<p>Consistent: The building masses, architectural elements and landscaping throughout the Proposed Project Site would be designed and implemented to create a sense of unity for the various areas of the Proposed Project Site. To ensure a consistent standard of residential and non-residential design quality throughout the Proposed Project Site, a set of design criteria (including building massing, architecture and landscaping) from the City’s Zoning Ordinance and future master plans for each District would be applied during the City’s development review process for specific residential and non-residential projects within the Proposed Project Site. Those design criteria will guide the physical development of any development project that will occur within the Proposed Project Site. They will assist in ensuring that the design of each development remains true to the principles established for Existing PAs 30 and 51. They are also similar to those applied to other areas of the City and thereby help create a sense of unity.</p>

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Table 5.7-1
General Plan Consistency Analysis

Applicable City of Irvine General Plan Policies	2012 Modified Project Consistency
<p>Policy (e): Enhance civic pride by maintaining high quality and attractive facilities (p. A-10).</p>	<p>Consistent: Development within the Proposed Project Site would be consistent in its uniqueness and attractiveness when compared to existing residential communities in other areas of the City. The 2012 Modified Project would encompass a walkable, community-oriented development with the inclusion of neighborhood parks, and other community-oriented facilities and uses. Additionally, the already approved Master Landscape and Trails Plan would be implemented as a part of the 2012 Modified Project and amended in the future, as necessary. Subsequent Vesting Tentative Tract Maps, Master Plans and Comprehensive Park Plans and Park Designs for the Proposed Project Site would be in compliance with City requirements and the adopted Master Landscape and Trails Plan and would also set forth the development of a number of key pathways and trails that are a part of the interconnected master trails plan of the Proposed Project Site and Great Park. Furthermore, the 2012 Modified Project would be designed and located in a manner that would tie into and enhance the overall development of the Great Park, including the open space and recreational and institutional areas and uses.</p>
<p>Policy (f): Promote sustainable development through energy and water conservation, reduced reliance on nonrenewable resources, and the use of native trees, shrubs, and grasses with low maintenance costs (p. A-10).</p>	<p>Consistent: The 2012 Modified Project's impact on energy and water use is addressed in Sections 5.4, <i>Greenhouse Gas Emissions</i>, and 5.13, <i>Utilities and Service Systems</i>, of this DSSEIR. Pursuant to PDF 4-8, future development within the Proposed Project Site will be constructed so that it achieves 15 percent higher energy efficiency than the applicable standards set forth in the 2008 California Building and Energy Efficiency Standards (Title 24, Part 6 of the California Building Code) or meet the standards in effect at the time of issuance of building permit. Additionally, all nonresidential development would be required to comply with the energy-efficiency requirements outlined in the most recent California Building Code and the PPPs and mitigation measures outlined in the 2011 Certified EIR and associated mitigation monitoring and reporting program (MMRP), which have been incorporated in Sections 5.4 and 5.13 of this DSSEIR. Individual project compliance with current and applicable green-building standards and techniques will be assured during the City's entitlement and building plan check review process.</p> <p>The City's Construction and Demolition ("C&D") Debris Recycling and Reuse Ordinance requires that 1) all residential projects of more than one unit, 2) nonresidential developments of 5,000 square feet or larger, and 3) nonresidential demolition/renovations with more than 10,000 square feet of building recycle or reuse a minimum of 75 percent of concrete and asphalt and 50 percent of nonhazardous debris generated. Development associated with the 2012 Modified Project would be required to comply with the provisions of that ordinance. Additionally, prior to the issuance of a building permit for development projects, development plans are required to demonstrate that the project meets the California Building and Energy Efficiency Standards (Title 24, Part 6 of the California Code of Regulations) in effect at that time, including participation in a green building program. The green building program allows a project applicant to select from a menu of techniques to achieve green building standards, many of which directly or indirectly will support energy conservation. The Energy Commission's 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent more efficient for nonresidential construction. The Energy Efficiency Standards, which take effect on January 1, 2014, offer</p>

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Table 5.7-1
General Plan Consistency Analysis

Applicable City of Irvine General Plan Policies	2012 Modified Project Consistency
	<p>builders better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses.</p> <p>Future development would also be required to comply with mitigation measures associated with waste reduction and recycling outlined in the 2011 Certified EIR and associated MMRP. Furthermore, the 2012 Modified Project would be designed to maximize the use of recycled water, as outlined in PDF 4-5 of the 2011 Certified EIR. Recycled water would be used for park areas and landscaping. Implementation of the 2012 Modified Project would utilize recycled water to serve the Proposed Project Site. Additionally, future specific development projects would be required to comply with the City's Sustainable Landscape Ordinance.</p>
<p>Policy (g): Distinguish individual PAs in character and physical appearance by considering the following characteristics during design and development (p. A-10):</p> <ul style="list-style-type: none"> • Physical and visual separation • Architectural style • PA edge 	<p>Consistent: Subsequent Master Plans would establish neighborhood edge treatments and entryways for the 2012 Modified Project which would create a visual and physical separation from the surrounding PAs and contribute to the distinctive character of the Great Park. At the same time, the 2012 Modified Project would implement an overall architectural and landscape design that would be compatible with the high-quality design standards seen throughout the City. The design of the 2012 Modified Project would be integrated with the overall Proposed Project Site to provide an overall cohesive identity for the Great Park. See also above response to Policy (b) of Objective A-1.</p>
<p>Policy (h): Incorporate the following components in each residential PA (p. A-11):</p> <ul style="list-style-type: none"> • A mixture of housing types and densities • A variety of public and private facilities • Activity nodes • Open space areas 	<p>Consistent: The residential neighborhoods that would be developed under the 2012 Modified Project would allow for an array of housing types and densities, including single-family attached and detached and clustered homes, which would accommodate a broad range of income levels and lifestyles and respond to local and regional housing needs. A detailed discussion of the 2012 Modified Project's housing assessment and needs is provided in Section 5.9, <i>Population and Housing</i>, of this DSSEIR.</p> <p>The 2012 Modified Project would encompass a walkable, community-oriented development with the inclusion of neighborhood parks, and other community-oriented facilities and uses, as required by City ordinance. A detailed discussion of the 2012 Modified Project's parks and recreational needs is provided in Section 5.11, <i>Recreation</i>, of this DSSEIR.</p>
<p>Objective A-2: Economic Development – Promote viable commercial centers, successful manufacturing areas, and dynamic employment centers.</p>	
<p>Policy (a): Retain and attract manufacturing and industrial uses within designated business centers (p. A-10).</p>	<p>Consistent: The Proposed Project allows for development of 3,364,000 square feet of Medical and Science uses and 1,318,200 square feet of Multi-Use. The 2012 Modified Project includes an option to convert up to 535,000 square feet of the proposed Multi-Use intensity to residential intensity for up to an additional 889 dwelling units within District 6 and Lot 48 of 2nd Amended VTTM 17008, subject to a vehicle trip limit. The 8.1 zone allows development of manufacturing and industrial uses.</p>

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*Table 5.7-1
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<i>Applicable City of Irvine General Plan Policies</i>	<i>2012 Modified Project Consistency</i>
Policy (f): Promote support and services retail uses within the business/industrial land use designations (p. A-11).	<p>Consistent: Implementation of the 2012 Modified Project would not preclude the development of support and services retail uses in various areas of the Proposed Project Site or other areas of Combined PA 51. For example, the existing and proposed areas zoned 8.1 Trails and Transit Oriented Development allow for a mix of uses, including low and high-intensity commercial uses, which would support the various residential, institutional, office and business uses that would be developed throughout the Proposed Project Site. This would be achieved through a range of permitted and envisioned commercially-oriented land uses and development types in the 8.1 TOD zoning designations.</p> <p>Additionally, the 2012 Modified Project would be served by existing and future retail centers on-site and in the surrounding PAs, including those found in PAs 8, 9, 32, 33 and 40.</p>
Objective A-3: Open Space Areas – Encourage land use development that preserves the beauty of the natural environment.	
Policy (a): Preserve the City's open space areas through implementation of the Phased Dedication and Compensating Development Program (p. A-11).	<p>Consistent: Implementation of the 2012 Modified Project would not impede development of the various recreation and open space elements of the General Plan and OCGP Master Plan (OCGPMP, which would be implemented in accordance with the Phased Dedication and Compensating Development Program. Additionally, implementation of the future Vesting Tentative Tract Maps, Master Plans and Comprehensive Park Plans and Park Designs for the Proposed Project Site would need to be in accordance with City requirements and the adopted Master Landscape and Trails Plan, and would set forth the development of a number of key pathways and trails that are a part of the interconnected master trails plan of the Proposed Project Site and the Great Park. Furthermore, the 2012 Modified Project would be designed and located in a manner that would tie into and enhance the overall development of the Great Park, including the open space and recreational and institutional areas and uses.</p> <p>The provision of park needs and open space for the 2012 Modified Project is addressed in Section 5.11, <i>Recreation</i>, of this DSSEIR.</p>
Objective A-4: Balanced Land Uses – Manage growth to ensure balanced residential and nonresidential development throughout the City.	
<p>Policy (a): Ensure that land uses enable the City to provide necessary municipal services by (p. A-12):</p> <ul style="list-style-type: none"> Implementing and monitoring Statistical Tables A-1 and A-2. 	<p>Consistent: The 2012 Modified Project is a part of the reuse of the former MCAS El Toro site, which would redevelop a large property that was previously developed and used for military operations. The 2012 Modified Project is located in and adjacent to existing urban areas, allowing for optimal use of existing public services and facilities, and orderly expansion of services and facilities. The proximity and available capacity of municipal services minimizes the cost of extending infrastructure into the Proposed Project Site. The 2012 Modified Project allows for a mix of uses located within in close proximity of each other, thereby allowing residents to walk or use alternative transportation methods to access jobs, services, and public services and facilities. The proposed land use pattern would reduce the impacts on infrastructure and save costs to local governments. Please refer to Sections 5.10, <i>Public Services</i>, and 5.13, <i>Utilities and Service Systems</i>, of this DSSEIR for a further discussion of how the public services and facilities system would be able to accommodate the land uses and activities proposed by the 2012 Modified Project.</p>

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<i>Applicable City of Irvine General Plan Policies</i>	<i>2012 Modified Project Consistency</i>
<p>Policy (c): Achieve a land use balance through the following methods (p. A-13):</p> <ul style="list-style-type: none"> • Coordination of land use and circulation patterns to ensure adequate circulation capacity and infrastructure. • Promotion of a diversity of housing types and affordability to meet the development objectives of the Housing Element. • Designation of sufficient institutional land to meet the needs of each PA. • Provision of adequate housing opportunities to support employment growth. • Preservation of open space areas. 	<p>Consistent: The Proposed Project Site is located in the vicinity of several major roadways, which would provide adequate circulation capacity and infrastructure to and from the Proposed Project Site. The 2012 Modified Project's land uses would also complement and improve the existing and proposed circulation and transportation facilities in and around the project area. For example, the land uses would be located and designed in a manner that would ensure use of the existing and future vehicular and nonvehicular transportation systems. Additionally, as a part of individual project developments, all necessary traffic and circulation improvements would be installed and/or funded to ensure that the City's roadways function as intended. Some traffic and circulation improvements may be subject to future environmental review. Internal roadway systems in the Proposed Project Site would also be coordinated with the existing and proposed land use and circulation patterns. The 2012 Modified Project proposes to allow level of service (LOS) "E" to be considered a potentially acceptable level of service within certain high activity, mixed-use areas within the Proposed Project Site. Please refer to Section 5.12, <i>Transportation and Traffic</i>, of this DSSEIR for a discussion of the potential impacts to the circulation system and capacity.</p> <p>The residential neighborhoods that would be developed under the 2012 Modified Project would offer an array of housing types and densities (low, medium and high), including single-family attached and detached and clustered homes, which would accommodate a broad range of income levels and lifestyles and respond to local and regional housing needs. Therefore, the 2012 Modified Project would help the City further meet its Regional Housing Needs Assessment (RHNA) through 2025 and implement the provisions of the Amended and Restated Development Agreement ("ARDA") regarding the residential component of the 2011 Approved Project. Jobs/housing balance and consistency with the City's Housing Element are further discussed in Section 5.9, <i>Population and Housing</i>, of this DSSEIR.</p> <p>The residents of the 2012 Modified Project would be served by existing schools within the Irvine Unified School District (IUSD) and the Saddleback Valley Unified School District (SVUSD). Additionally, the 2011 Approved Project included two K-8 school sites, each with a capacity of 1,000 students. Residents of the 2012 Modified Project would be served by these new schools. In addition, the 2012 Modified Project proposes a new 2,600 student high school located in District 5. Please refer to Section 5.10, <i>Public Services</i>, of this DSSEIR for a discussion of the 2012 Modified Project's potential impacts on schools.</p> <p>Implementation of the 2012 Modified Project would not impede development of the various recreation and open space elements of the General Plan and the OCGMP, which would be implemented in accordance with the Phased Dedication and Compensating Development Program. Additionally, future Vesting Tentative Tract Maps, Master Plans and Comprehensive Park Plans and Park Designs for the Proposed Project Site would need to be in accordance with City requirements and the adopted Master Landscape and Trails Plan, and would set forth the development of a number of key pathways and trails that are a part of the interconnected master trails plan of the Proposed Project Site and Great Park. Furthermore, the 2012</p>

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	Modified Project would be designed and located in a manner that would tie into and enhance the overall development of the Great Park, including the open space and recreational and institutional areas and uses.
Policy (d): Reduce expenditures for public services and facilities by clustering residential development (p. A-13).	Consistent: See above response to Policy (a) of Objective A-4. Additionally, the 2012 Modified Project's residential development is surrounded by existing and planned urban uses and would thereby contribute to the clustering of development. Establishing new development in an area already served by public services (such as police and fire protection services) also lessens the degree to which public services would be required to be expanded to serve the Project Proposed Site, thereby lessening the associated expenditures. Furthermore, with the clustering of the development in an urbanized area, many of the new public facilities that would be developed within the Proposed Project Site to serve the 2012 Modified Project, including two planned K-8 schools, and a new 2,600 student high school, public parks and trails, would also serve surrounding areas. Please refer to Sections 5.10, <i>Public Services</i> , and 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR for a further discussion of how the public services and facilities system would be able to accommodate the land uses and activities proposed by the 2012 Modified Project.
Objective A-5: Fiscal Program – Promote economic prosperity by ensuring City revenues meet expenditures and provide quality services without burdensome levels of fees or taxes.	
Policy (a): Maintain or improve existing service levels while extending services to newly-developed areas (p. A-14).	Consistent: See above responses to Policies (a) and (d) of Objective A-4. Additionally, please refer to Sections 5.10, <i>Public Services</i> , and 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR for a further discussion of how project-related improvements would maintain and improve existing service levels and accommodate the land uses and activities proposed by the 2012 Modified Project.
Policy (e): Encourage maintenance of common areas by community associations and/or maintenance districts (p. A-14).	Consistent: Appropriate community/home owner/commercial/business park associations, maintenance, or other districts would be formed and established throughout the various areas of the Proposed Project Site in accordance with City requirements and in compliance with the ARDA.
Objective A-6: Land Use Compatibility – Achieve harmonious land use patterns throughout Irvine.	
Policy (i): Ensure that sensitive uses are allowed in areas with identified hazards only if the hazard has been adequately analyzed and mitigated (p. A-17).	Consistent: Adherence to existing ordinances and regulations and to the PPPs and mitigation measures outlined in the 2011 Certified EIR and associated MMRP, which have been incorporated in Section 5.5, <i>Hazards and Hazardous Materials</i> , of this DSSEIR, would ensure that foreseeable upset and accident conditions involving the release of hazardous materials are reduced to less than significant levels. For example, as outlined in Mitigation Measure HH5 of the 2011 Certified EIR, prior to the issuance of a grading permit, the applicant shall prepare and the Director of Community Development shall approve a protocol plan (including but not limited to worker training, health and safety precautions, additional testing requirements, and emergency notification procedures) in the event that unknown hazardous materials are discovered during grading, construction, and/or related development activities. Additionally, said protocol plan will be revised should the discovery of previously unknown hazardous materials be made during any of the above mentioned development activities. The applicant and/or property owner that discovers contamination due to past military operations not previously identified by the DON shall be responsible for notifying the DON, appropriate regulatory agencies, and the Director of Community Development of the City in a timely manner. Therefore, the 2012 Modified Project would ensure that hazards are adequately analyzed and mitigated prior to allowing the development of sensitive residential uses.

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Applicable City of Irvine General Plan Policies	2012 Modified Project Consistency
	Additionally, the use of hazardous materials is controlled and permitted by various state, federal, and local agencies, including the Orange County Fire Authority (“OCFA”), which conducts Uniform Fire Code inspections and assists in reducing risks associated with the use of hazardous materials in the community. OCFA has a dedicated hazardous materials response team. The hazardous materials control and safety programs and available emergency response resources of OCFA, along with OCFA periodic inspections to ensure regulatory compliance, reduce the potential risk associated with nearby commercial and industrial businesses.
Policy (j): Residential areas and sensitive uses shall be protected from the encroachment of incompatible activities or land uses which would cause a hazard or substantial nuisance or otherwise create a negative impact upon sensitive uses or residential living environment (p. A-17).	Consistent: See above response to Policy (i) of Objective A-6. The proposed 8.1 TTOD zoning will allow a mix of residential and non-residential uses and contains District standards that regulate design, District character, and density and intensity that will protect against non-compatible uses. However, the use of hazardous materials is controlled and permitted by various state, federal, and local agencies, including the Orange County Fire Authority (“OCFA”), which conducts Uniform Fire Code inspections and assists in reducing risks associated with the use of hazardous materials in the community. OCFA has a dedicated hazardous materials response team. The hazardous materials control and safety programs and available emergency response resources of OCFA, along with OCFA periodic inspections to ensure regulatory compliance, reduce the potential risk associated with nearby commercial and industrial businesses.
Objective A-7: Urban Design – Create a visually attractive and efficiently organized City.	
Policy (c): Implement the concept of a multiple focal point City designed to minimize congestion by conveniently locating facilities and services in each PA (p. A-18).	Consistent: The Proposed Project Site would be host to a number of public facilities and services (e.g., two K-8 schools, a new 2,600 student high school, open space trails, retail uses). Local residents would have access to all these amenities as well as existing and future public facilities and commercial centers located on-site and in adjacent areas that are located offsite but adjacent or in very near proximity to the Proposed Project Site. Additionally, the 2012 Modified Project would place new housing in close proximity to existing employment centers and proposed employment-generating uses, such as those found in the Irvine Spectrum. Furthermore, the existing and proposed 8.1 Trails and Transit Oriented Development zoning designations within the Proposed Project Site allow for a mix of uses, including low and high-intensity commercial uses, which would support the various residential, institutional, office and business uses that would be developed throughout the Proposed Project Site. Future master plans for each District will be subject to review by the City to ensure compliance with this policy.
Policy (d): Ensure that each PA contains an internal system of trails linking schools, shopping centers, and other public facilities with residences (p. A-18).	Consistent: Future Vesting Tentative Tract Maps, Master Plans and Comprehensive Park Plans and Park Designs for the Proposed Project Site would be in compliance with City requirements and the adopted Master Landscape and Trails Plan, and would provide for the development of a number of key pathways and trails that would link schools, shopping centers, and other public facilities with residences. The variety of trail types are intended to provide connectivity between the Proposed Project Site, Great Park, public open space outside the Great Park, and other nearby areas.

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<p>Policy (e): Distinguish PAs in character and physical appearance from each other, considering the following during design and development (p. A-18):</p> <ul style="list-style-type: none"> Physical, visual separation and differentiation. Physical compatibility with the local environment including topography. Mixture of housing types and densities. Range of age and income groups. Variety of public and private facilities. Activity nodes. Varied “skyline.” Functional relationship among the components of the community. Interface with adjacent PAs. 	<p>Consistent: See above responses to Policies (a), (b), (e), (g) and (h) of Objective A-1 and Policy (a) of Objective A-3.</p>
Circulation Element	
Objective B-1: Roadway Development – Plan, provide and maintain an integrated vehicular circulation system to accommodate projected local and regional needs.	
<p>Policy (c): Develop, on an incremental basis, a vehicular circulation system responding to local and regional access requirements. The following Level of Service (LOS) Standards shall be the goal applied to arterial highways, as shown in Figure B-1, which are in Irvine or its sphere of influence, and which are under the City’s jurisdiction (p. B-7).</p> <ul style="list-style-type: none"> LOS E or better shall be considered acceptable within the Irvine Business Complex (IBC-PA 36), Irvine Center (PA 33), and at the intersection of Bake Parkway and the I-5 northbound off-ramp. In conjunction with individual subdivision map level traffic studies for development proposed in Pas 30 and 51, a LOS “E” standard would be considered acceptable for application to intersections impacted in PAs 13, 30, 31, 32, 34, 35, and 39, subject to additional conditions. LOS D or better shall be considered acceptable within all other areas. 	<p>Consistent: The 2012 Modified Project’s impacts on LOS standards along arterial highways are discussed in detail in Section 5.12, <i>Transportation and Traffic</i>, of this DSSEIR. As outlined in Section 5.12, all intersections would operate at an acceptable LOS, as required by the General Plan, assuming all proposed mitigation is implemented and that the improvements identified in jurisdictions other than the City are completed. The Proposed Project includes a request to modify the General Plan to identify locations where LOS E may be considered acceptable as shown on previous Figure 3-6, <i>Proposed Locations where LOS E May be Acceptable</i>.</p> <p>With the exception of the average daily trips (“ADT”) associated with the 2012 Modified Project’s 1,194 DB Units (or 1,505 DB units with optional conversion) granted pursuant to state law, the 2012 Modified Project would not increase vehicle trips in the area and would result in the same number of ADT in Combined PA 51 as are already allowed in Existing PAs 30 and 51, collectively, pursuant to the City’s Zoning Ordinance and Section 3.1.4 of the ARDA. However, as discussed in Section 5.12, <i>Transportation and Traffic</i>, no significant traffic-related impacts associated with the additional DB Units have been identified provided that the mitigation measures identified in Section 5.12 are implemented.</p> <p>The Proposed Project Site is also located in the vicinity of several major roadways, which would provide adequate circulation capacity and infrastructure to and from the Proposed Project Site. Additionally, the 2012 Modified Project’s land uses would complement and improve the existing and proposed circulation and</p>

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	transportation facilities in and around the Proposed Project Site. For example, as a part of individual project developments, all necessary traffic and circulation improvements would be installed and/or funded to ensure that the City's roadways function as intended. Internal roadway systems within the Proposed Project Site would also be coordinated with the existing and proposed land use and circulation patterns.
Policy (n): Design roadways which ensure safe and efficient traffic flow while also providing adequate and convenient access to retail uses (p. B-9).	Consistent: While the existing surrounding arterial road system would continue to function as planned to move vehicles through the Proposed Project Site, the new project-related internal streets would provide efficient pedestrian and vehicular connections to the existing surrounding arterials at key locations. All 2012 Modified Project roadways would be designed in accordance with the City's adopted roadway design standards, which would be enforced by the City during its required development review process for individual development projects. See also above response to Policy (c) of Objective B-1.
Objective B-2: Roadway Design – Develop a vehicular circulation system consistent with high standards of transportation engineering safety and with sensitivity to adjoining land uses.	
Policy (g): Include mitigation measures in the approval of all proposed developments to minimize negative impacts of the automobile (p. B-10).	Consistent: The 2011 Certified EIR and associated MMRP includes PPPs and mitigation measures, which have been incorporated in Section 5.12, <i>Transportation and Traffic</i> , of this DSSEIR, that would be applicable to the 2012 Modified Project and would help minimize negative automobile-related impacts resulting from the 2012 Modified Project. For example, as outlined in Mitigation Measure TRAN 1, future non-residential development shall participate in an existing or future transportation management association to reduce traffic, air quality and noise impacts. Additionally, the 2012 Modified Project involves the placement of new housing in close proximity to existing and future jobs, and vice versa, which would serve to reduce vehicle miles traveled ("VMT"). Furthermore, elements have been incorporated into the design of the 2012 Modified Project to encourage the use of alternate modes of transportation, such as trail linkages, access to public transportation, and placing public services and retail services within walking distance of the residential communities.
Objective B-3: Pedestrian Circulation – Establish a pedestrian circulation system to support and encourage walking as a mode of transportation.	
Policy (a): Link residences with schools, shopping centers, and other public facilities, both within a PA and to adjacent PAs, through an internal system of trails (p. B-13).	Consistent: See above responses to Policy (d) of Objective A-7 and Policy (g) of Objective B-2. Additionally, steps would be taken to link surrounding land uses to the Proposed Project Site with the pedestrian's safety in mind. Where possible, landscaping would be used along sidewalks and trails to act as a buffer between pedestrians and vehicles. In addition, the 8.1 TTOD zoning allows a mix of uses to reduce dependence on the automobile.
Policy (b): Require development to provide safe, convenient, and direct pedestrian access to surrounding land uses and transit stops. (p. B-13).	
Policy (c): Design and locate land uses to encourage access to them by nonautomotive means (p. B-13).	

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Objective B-4: Bicycle Circulation – Plan, provide and maintain a comprehensive bicycle trail network that together with the regional trail system, encourages increased use of bicycle trails for commuters and recreational purposes.	
<p>Policy (b): Require a system of bicycle trails, both on- and off-street, in each PA. Such trails shall be linked to the system shown on Figure B-4. The on-street trails shall be designed for the safety of the cyclist (p. B-14).</p> <p>Policy (c): The trail system shall be designed to accommodate cyclists of all levels of experience and shall provide for both recreation and transportation (p. B-14).</p> <p>Policy (d): Require bicycle trail linkages between residential areas, employment areas, schools, parks, community facilities, commercial centers, and transit facilities (p. B-14).</p> <p>Policy (h): Provide off-street bicycle trails in areas with minimal cross traffic, such as open space spine, flood control and utility easements, where possible (p. B-14).</p>	<p>Consistent: Subsequent Vesting Tentative Tract Maps, Master Plans and Comprehensive Park Plans and Park Designs for the Proposed Project Site would be in compliance with City requirements and the adopted Master Landscape and Trails Plan and would allow for the development of a number of key pathways and trails that are a part of the Proposed Project Site's and Great Park's interconnected master trails plan and would link schools, shopping centers, and other public facilities with residences. As already set forth in the adopted Master Landscape and Trails Plan, the proposed trail system would also be designed to accommodate cyclists of all levels of experience and would connect to other existing pedestrian and bicycle trails in the vicinity of Proposed Project Site, including those along Irvine Boulevard and Sand Canyon Parkway. A wide range of on- and off-street bicycle paths would be accommodated along the 2012 Modified Project's roadways and throughout other open space and recreation areas on the Proposed Project Site and in the Great Park (see Figure 5.12-32 in Section 5.12 of this DSSEIR). The 2012 Modified Project's comprehensive pedestrian and bicycle linkage system would be implemented (in part by the adopted Master Landscape and Trails Plan) to not only provide an important and convenient linkage system within the Proposed Project Site, but would also serve surrounding PAs, public open space outside the Proposed Project Site, and other nearby areas and land uses.</p>
Objective B-5: Riding and Hiking Trail Networks – Plan, develop and maintain a riding and hiking trail network and support facilities to satisfy the needs of riders and hikers.	
<p>Policy (b): Locate and maintain riding and hiking trails as illustrated on Figure B-5, Trails Network, and in areas identified as permanent open space, scenic highway corridors, agricultural edges, public utility rights of way and easements, flood control channels, and areas designated for rural and estate density (p. B-15).</p>	<p>Consistent: See above responses to Policies (b), (c), (d), and (h) of Objective B-4.</p>
Objective B-6: Public Transit Program – Work with Orange County Transportation Authority to implement a public transit system for trips in the City and adjacent areas.	
<p>Policy (a): Plan residential, commercial, and industrial areas to enable effective use of public transit (p. B-16).</p>	<p>Consistent: A portion of Districts 2 and 3 of the Proposed Project Site is served by OCTA bus lines. Bus stops are provided along various points of the OCTA bus routes, which include Alton Parkway, Barranca Parkway and Irvine Boulevard. Any new bus stops to serve the 2012 Modified Project will be coordinated with OCTA. The 2012 Modified Project's and Great Park's comprehensive trails system would provide opportunities for residents of the 2012 Modified Project to walk or bike to the various bus stops. Additionally, implementation of the 2012 Modified Project would put residences and businesses in proximity to the Irvine Station, a primary transit center that serves as a train station featuring Metrolink and AMTRAK service, allowing residents of the 2012 Modified Project to walk or bike to the Irvine Station.</p>

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Applicable City of Irvine General Plan Policies	2012 Modified Project Consistency
Housing Element	
Goal 1.0 – Provide suitable sites for housing development which can accommodate a range of housing by type, size, location, price and tenure.	
Policy1.1: Ensure a mix of housing for all economic segments across all PAs.	Consistent: The 2012 Modified Project allows for an array of housing types and densities (low, medium and high), including single-family attached and detached and clustered homes, which would accommodate a broad range of income levels and lifestyles and respond to local and regional housing needs. Therefore, the 2012 Modified Project would help the City further meet its RHNA through 2025 and would help improve the City’s jobs-to-housing balance. Jobs/housing balance and consistency with the City’s Housing Element are further discussed in Section 5.9, <i>Population and Housing</i> , of this DSSEIR
Policy1.2: Strive to improve the City’s jobs-to-housing balance.	
Policy1.5: Advocate balanced residential and employment growths in the region, to ensure all jurisdictions share the responsibility for housing the region.	
Policy 1.6: Ensure proper land use planning for adequate infrastructure, services, and facilities is provided to serve existing and future residents.	Consistent: The Proposed Project Site is located in the vicinity of adequate infrastructure, services, and facilities. An analysis of the 2012 Modified Project’s impacts on infrastructure, services and facilities is provided in Sections 5.10, <i>Public Services</i> , 5.12, <i>Transportation and Traffic</i> , and 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR. As concluded in these sections, no significant impacts on infrastructure, services or facilities would occur as a result of the 2012 Modified Project.
Seismic Element	
Objective D-2: Response to Hazards – Require appropriate measures to protect public health and safety and to respond to seismic hazards in all public and private developments.	
Policy (g): Require a detailed geological and soils study as needed, in accordance with the requirements of the City’s Subdivision Ordinance, before approving development (p. D-5).	Consistent: The buildings and structures of the 2012 Modified Project would be required by state law to meet stringent seismic safety requirements of the latest Building Codes adopted by the City. Additionally, individual development projects would be required to adhere to the mitigation measures outlined in the 2011 MMRP for the 2011 Approved Project, which are set forth in Table 1-1 of this DSSEIR. For example, as outlined in Mitigation Measure GS 4, prior to issuance of a building permit, the City shall require that all development be designed in accordance with the seismic design provisions outlined in future proposed development geotechnical reports and specified in the latest Building Codes adopted by the City. Compliance with this measure shall be verified by the Community Development Department.
Policy (h): Continue to require structures to conform to the seismic design requirement found in the Uniform Building Code (p. D-5).	
Policy (i): Ensure that the most recent adopted seismic standards are used for new construction (p. D-5).	
Cultural Resources Element	
Objective E-1: Historical, Archeological, Paleontological Surveys – Identify and obtain information on the existence and significance of historical, archeological, and paleontological sites and encourage land use planning which incorporated this information.	
Policy (a): Require appropriate surveys and necessary site investigations in conjunction with the earliest environmental document prepared for a project, in accordance with the California Environmental Quality Act (CEQA) and the City’s CEQA procedures (p. E-4).	Consistent: The Cultural Resources Element of the General Plan has a goal to “ensure the proper disposition of historical, archaeological, and paleontological resources to minimize adverse impacts, and to develop an increased understanding and appreciation for the community’s historic and prehistoric heritage, and that of the region.” According to Figure E-1, <i>Historical/Archeological Landmarks</i> , of the City’s General Plan Cultural Resources Element, there are no known archaeological resources in the Proposed Project Site. Additionally, the Proposed Project Site is in a low paleontological sensitivity zone according to Figure E-2,

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Applicable City of Irvine General Plan Policies	2012 Modified Project Consistency
<p>Policy (d): Encourage, if appropriate, removal of all materials collected during the survey/investigation to local museums, universities, or other depositories providing access for public review or scientific research (p. E-4).</p> <p>Policy (i): Buffer and protect the integrity of an historic site and/or resources contained therein, if the Planning Commission, during review of a discretionary development case, determines preservation is required (p. E-5).</p>	<p><i>Paleontological Sensitivity Zones.</i> Therefore, it is believed that no archaeological or paleontological resources are present on the Proposed Project Site.</p> <p>While grading and construction activities could impact previously unknown archaeological or paleontological resources, individual project developers would be required to comply with the applicable City Standards Conditions and applicable provisions in the Irvine Municipal Code, including:</p> <ul style="list-style-type: none"> • Standard Condition 2.5. Prior to the issuance of the first preliminary or precise grading permit for a project that is located on land that includes potentially significant archaeological and/or paleontological sites, and for any subsequent permit involving excavation to increased depth, the applicant shall provide letters from an archaeologist and/or a paleontologist. The letters shall state that the applicant has retained these individuals, and that the consultant(s) will be on call during all grading and other significant ground disturbing activities. • Irvine Municipal Code, Sec. 3-4-132 (Protection of Natural, Cultural, Structural and Archaeological Resources). This section prohibits any person from possessing, destroying, injuring, defacing, removing, digging or disturbing from its natural state any of the following: plants, wildlife, artifacts, minerals, landscape structures, improvements, wood, and natural products. <p>Additionally, any grading activities would be subject to the City's grading ordinance. Furthermore, zoning of the Proposed Project Site accommodates a number of existing facilities associated with the former MCAS El Toro, encouraging adaptive reuse wherever possible. For example, aviation hangars located in the southern portion of Existing PA 51 could be appropriate for reuse as warehousing, manufacturing, or motion picture production studios, museum, sports, cultural facilities, or other uses consistent with the zoning of the site.</p>
<p>Objective E-2: Hazard Occurrence – Evaluate surveyed sites for their present and potential cultural, educational, recreational, and scientific value to the community and the region, and determine their proper disposition prior to the approval of any project which could adversely affect them.</p>	
<p>Policy (g): Ensure that adverse impacts of a proposed project on cultural resources are mitigated in accordance with CEQA, as well as other appropriate City policies and procedures, where preservation of a significant site is not practical (p. E-6).</p>	<p>Consistent: See above responses to Policies (a), (d) and (i) of Objective E-1.</p>

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Applicable City of Irvine General Plan Policies	2012 Modified Project Consistency
Noise Element	
Objective F-1: Mobile Noise – Ensure that City residents are not exposed to mobile noise levels in excess of the CNEL Interior and Exterior Noise Standards (Table F-1), and Single Event Noise Standard.	
<p>Policy (c): Ensure that all proposed development projects are compatible with the existing and projected noise level by using the Land Use Noise Compatibility Matrix (Table F-2) (p. F-7).</p> <p>Policy (d): Require noise studies to be prepared in accordance with the City’s environmental review procedure for all projects that are not “clearly compatible” with the future noise levels at the site (p. F-7).</p> <p>Policy (f): Require noise studies to identify all the mitigation measures necessary to reduce noise levels to meet the CNEL standard (Table F-1) and Single Event Noise Standard (p. F-7).</p>	<p>Consistent: A detailed noise analysis has been prepared for the 2012 Modified Project and is included in Section 5.8, <i>Noise</i>, of this DSSEIR. As concluded in Section 5.8, no significant impacts related to noise would occur as a result of development of the 2012 Modified Project. Additionally, implementation of the 2012 Modified Project would have to adhere to the noise-reduction-related PPPs outlined in the 2011 Certified EIR, including:</p> <ul style="list-style-type: none"> • PPP 8-1 – Construction activities occurring as part of the project shall be subject to the limitations and requirements of Section 6-8-205(a) of the Irvine Municipal Code which states that construction activities may occur between 7:00 AM and 7:00 PM Mondays through Fridays, and 9:00 AM and 6:00 PM on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative. Trucks, vehicles, and equipment that are making, or are involved with, material deliveries, loading, or transfer of materials, equipment service, maintenance of any devices or appurtenances for or within any construction project in Irvine shall not be operated or driven on City streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted shall take impact upon the community into consideration. No construction activity will be permitted outside of these hours except in emergencies including maintenance work on the City rights-of-way that might be required. • PPP 8-2 – Prior to the issuance of building permits for each structure or tenant improvement other than a parking structure, the applicant shall submit a final acoustical report prepared to the satisfaction of the Director of Community Development. The report shall show that the development will be sound attenuated against present and projected noise levels, including roadway, aircraft, helicopter and railroad, to meet City interior and exterior noise standards. The final acoustical report shall include all information required by the City’s Acoustical Report Information Sheet (Form 42-48). In order to demonstrate that all mitigation measures have been incorporated into the project, the report shall be accompanied by a list identifying the sheet(s) of the building plans that include the approved mitigation measures (Standard Condition B.1). <p>Additionally, the 2011 Approved Project includes mitigation measures that would apply to the 2012 Modified Project and would minimize negative noise impacts caused by automobiles. For example, as outlined in Mitigation Measure TRAN 1, future non-residential development shall participate in an existing or future transportation management association to reduce traffic, air quality and noise impacts.</p>

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<p>Policy (m): Reduce noise impacts from mobile sources by encouraging use of alternative modes of transportation (p. F-7).</p>	<p>Consistent: Existing and future residents of the 2012 Modified Project would have access to a wide range of existing and proposed alternative modes of transportation. See above responses to Policies (b), (c) and (d) of Objective B-4 and Policy (a) of Objective B-6.</p>
<p>Objective F-2: Stationary Noise – Ensure that City residents are not exposed to stationary noise levels in excess of the City Noise Ordinance standards.</p>	
<p>Policy (a): Require any new construction to meet the City Noise Ordinance standards as a condition of building permit approval (p. F-8).</p> <p>Policy (c): Condition subdivision approval of the projects adjacent to any developed/occupied uses by requiring the developer to submit a construction-related noise mitigation plan to the Director of Community Development for review and approval prior to issuance of grading permits. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the project, through the use of such methods as the following (p. F-8):</p> <ul style="list-style-type: none"> • Temporary noise attenuation fences. • Preferential location of equipment. • Use of current technology and noise suppression equipment. 	<p>Consistent: See above responses to Policies (c), (d) and (f) of Objective F-1.</p>
<p>Public Facilities and Services Element</p>	
<p>Objective G-1: Public Facilities Development – Coordinate planning and development of Irvine’s public facilities and services with the private sector, University of California, Irvine, the Irvine Unified School District, Orange County and other public agencies.</p>	
<p>Policy (i): Achieve desired levels of service from service providers, such as the Orange County Fire Authority and local school and college districts, through coordinated land use and facility planning (p. G-5).</p>	<p>Consistent: An analysis of the 2012 Modified Project’s impacts on service providers is outlined in Section 5.10, <i>Public Services</i>, of this DSSEIR. As discussed in Section 5.10, the 2012 Modified Project would not hinder service providers from achieving a desired level of service. Additionally, PPPs and mitigations measure from the 2011 Certified EIR and associated MMRP will apply to the 2012 Modified Project, as explained in Section 5.10, to ensure that adequate levels of service for service providers would be achieved. The PPPs include:</p> <ul style="list-style-type: none"> • PPP 10-2 – Every project applicant shall comply with all applicable Orange County Fire Authority codes, ordinances, and standard conditions regarding fire prevention and suppression measures relating to water improvement plans, fire hydrants, automatic fire extinguishing systems, fire access, access gates, combustible construction, water availability, and fire sprinkler systems. • PPP 10-6 – Pursuant to California Government Code Section 65995, the individual applicants shall pay developer fees to the appropriate school districts at the time building permits are issued; payment of the adopted fees would provide full and complete mitigation of school impacts.

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Applicable City of Irvine General Plan Policies	2012 Modified Project Consistency
Integrated Waste Management Element	
Objective H-1: Solid Waste – Cooperate in guiding the development and improvement of a solid waste disposal system within the County of Orange that will meet the needs of the City and protect the City from damage by unplanned disposal of refuse.	
Policy (g): Require, to the extent necessary to comply with state law, during discretionary application review, solid waste reduction and recycling efforts for residential, commercial, industrial, institutional and recreational land uses to reduce the amount of waste disposed at landfills (p. H-5).	Consistent: Section 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR includes a detailed analysis of solid waste and recycling impacts and also outlines a number of PPPs and incorporates mitigation measures from the 2011 Certified EIR and associated MMRP associated with waste reduction and recycling. Those PPPs and mitigation measures would assist in minimizing impacts on the environment and conserving natural resources. For example, since the 2012 Modified Project would result in new construction that would generate solid waste, efforts would be made to recycle in order to reduce environmental impacts. As outlined for example in PPP 13-7, prior to the issuance of grading permits for a project that involves the demolition of an asphalt or concrete parking lot onsite, the applicant shall submit a waste management plan demonstrating compliance with the requirements of Title 6, Division 7 of the City of Irvine Municipal Code relating to recycling and diversion of demolition waste as applicable to said project. Over the course of demolition or construction, the applicant shall ensure compliance with all code requirements related to the use of City-authorized waste haulers. Additionally, as a standard City requirement, the City's waste management experts and Waste Management of Orange County would review individual project developments during the discretionary application review to ensure that solid waste facilities are adequately designed and ample opportunities for recycling are provided. Future development within the Proposed Project Site would also be required to comply with mitigation measures associated with waste reduction and recycling outlined in the 2011 Certified EIR and associated MMRP, which are reproduced in Section 5.13 of this DSSEIR.
Objective H-3: Waste Water – Control waste water and storm runoff in a manner to minimize impact on adjacent existing or planned land uses.	
Policy (a): Encourage the use of recycled water for secondary water uses, such as fire hydrants, onsite fire sprinkler systems, and wastewater systems, and for irrigation purposes to the greatest extent feasible (p. H-7).	Consistent: The 2012 Modified Project's impact on water supply and resources is addressed in Section 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR. As disclosed in Section 5.13, implementation of the 2012 Modified Project would not cause a significant impact on water supply, treatment, or distribution. Recycled water, which is sewage that has been substantially treated, is the primary water source utilized for irrigation purposes in Irvine. As with the 2011 Approved Project analyzed in the 2011 Certified EIR, the 2012 Modified Project would use recycled water for irrigating park areas and landscaping.
Policy (b): Require developers of new projects located adjacent to or upstream of natural water courses to develop surface drainage systems which will direct low flows (those which carry the most pollutants) away from natural water sources into an area designed to remove pollutants. Require evidence be provided that any proposed development will have adequate sewer service, including assurance that collection and treatment capacity can be accommodated (p. H-7).	Consistent: An analysis of the 2012 Modified Project's impacts on wastewater services and facilities is outlined in Section 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR. As concluded in Section 5.13, project-generated wastewater could be adequately treated by the existing wastewater service provider and existing facilities. No significant impacts on wastewater services or facilities would occur as a result of the 2012 Modified Project. The 2012 Modified Project's impacts on water quality are outlined in Section 5.6, <i>Hydrology and Water Quality</i> , of this DSSEIR. As outlined in Section 5.6, individual project applicants would be required to comply with all local, state, and federal requirements related to water quality, including the NPDES

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<p>Policy (c): Require a National Pollution Discharge Elimination System (NPDES) permit to be obtained from the State Water Resources Control Board whenever surface water is collected anywhere for discharge as a point source, or if a point source discharge is contemplated, a NPDES permit must be obtained from the State Water Resources Control Board.</p> <p>Encourage the use of alternatives Best Management Practices (BMPs) to control and minimize urban pollutant runoff (p. H-7).</p>	<p>requirements established by the State Water Resources Control Board. Additionally, individual project developments would be required to adhere to the PPPs outlined in the 2011 Certified EIR. For example, City Standard Condition 2.13, which is reproduced as PPP 6-4 in the 2011 Certified EIR, requires individual project applicants to submit, and the Chief Building Official to approve, a Water Quality Management Plan (“WQMP”) prior to the issuance of precise grading permits. The WQMP is required to identify the BMPs that would be used on individual development sites to control predictable pollutant runoff.</p> <p>Furthermore, individual development projects would be required to adhere to the mitigation measures adopted in the MMRP for the 2011 Approved Project, which are set forth in Table 1-1 of this DSSEIR. For example, as outlined in Mitigation Measure H/WQ2, prior to issuance of a grading permit, evidence (e.g., in the form of a construction management plan) shall be provided that demonstrates that all stormwater runoff and dewatering discharges from the project area shall be managed to the maximum extent practicable or treated as appropriate to comply with water quality requirements identified in the Santa Ana Regional Water quality Control Board Basin Plan, including Total Maximum Daily Load (“TMDL”) Implementation Plan adopted for this watershed.</p>
Energy Element	
Objective I-1: Energy Conservation – Maximize energy efficiency through land use and transportation planning.	
<p>Policy (a): Consider the following or comparable design features, to the extent feasible, in developments at time of concept plan, subdivision, or development review (p. I-4):</p> <ul style="list-style-type: none"> • Encourage energy-efficient landscaping (water-conserving plants, indigenous vegetation, and use of onsite water runoff) consistent with the City’s Sustainability and Landscape Ordinance. • Encourage, as part of required landscape plans, plant types and irrigation systems that minimize water usage and provide cooling opportunities during summer and minimize conflicts with solar access during winter. • Require cut-off or directional lighting fixtures to be used to direct light only to desired areas and to reduce glare. 	<p>Consistent: The 2012 Modified Project’s impact on energy use is addressed in Sections 5.4, <i>Greenhouse Gas Emissions</i>, and 5.13, <i>Utilities and Service Systems</i>, of this DSSEIR. See above response to Policy (f) of Objective A-1.</p> <p>Individual development projects would be required to adhere to the City’s Sustainability and Landscape Ordinance. Compliance with this ordinance would be verified during the City’s development review and building plan check process. Additionally, individual project developments would be required to comply with the lighting regulations outlined in the City’s Municipal Code and Zoning Ordinance. For example, as required by Chapter 3-16 (Lighting) of the City’s Zoning Ordinance, outdoor lighting is required to be designed and installed so that all direct rays are confined to the site and adjacent properties are protected from glare. Furthermore, City Standard Condition 3.6 (Sight Lighting Requirements), which is reproduced as PPP 1-1 in the 2011 Certified EIR, requires individual project applicants to demonstrate that they have met the Irvine Uniform Security Code requirements for lighting through the submittal of a lighting package prior to the issuance of building permits. Finally, individual development projects would be required to adhere to the mitigation measures related to lighting that are outlined in the 2011 Approved Project’s MMRP. For example Mitigation Measures A1 requires that lighting plans be reviewed by the Community Development Director prior to issuance of building permits to ensure minimal light intrusion and spillover.</p>

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<p>Policy (b): Encourage and promote incorporation of energy conservation measures. The measures should be developed in conjunction with the applicant and may include (p. I-4):</p> <ul style="list-style-type: none"> • Active solar water and/or space heating. • Passive design features for heating and cooling. • Use of energy efficient devices. 	<p>Consistent: The 2012 Modified Project's impact on energy use is addressed in Sections 5.4, <i>Greenhouse Gas Emissions</i>, and 5.13, <i>Utilities and Service Systems</i>, of this DSSEIR. See above response to Policy (f) of Objective A-1.</p>
<p>Policy (g): Promote the use of alternative modes of transportation by the following programs (p. I-5):</p> <ul style="list-style-type: none"> • Encourage use of regional public transportation (e.g., rail service). • Encourage use of the bus system by working with OCTA. • Encourage use of public transit and ridesharing. 	<p>Consistent: Existing and future residents of the 2012 Modified Project would have access to a wide range of existing and proposed alternative modes of transportation. See above responses to Policies (b), (c) and (d) of Objective B-4 and Policy (a) of Objective B-6.</p>
Safety Element	
Objective J-1: Hazard Occurrence – Identify actions that the City, in concert with other jurisdictions, must take to reduce the probability of hazard occurrence.	
<p>Policy (e): Require development proposals to be reviewed by the Orange County Fire Authority to ensure adequate fire protection and precautions occur (p. J-4).</p>	<p>Consistent: As standard practice, individual development projects would be required to be reviewed by OCFA during the City's development review and building plan check process in order to ensure adequate fire protection and precautions occur.</p> <p>Additionally, individual development projects within the Proposed Project Site would be required to comply with the PPPs outlined in the 2011 Certified EIR and reproduced in Section 5.10, <i>Public Services</i>, of this DSSEIR. For example, as outlined in PPP 10-2, every project applicant is required to comply with all applicable OCFA codes, ordinances, and standard conditions regarding fire prevention and suppression measures relating to water improvement plans, fire hydrants, automatic fire extinguishing systems, fire access, access gates, combustible construction, water availability, and fire sprinkler systems.</p> <p>Furthermore, individual development projects would be required to adhere to the mitigation measures related to fire protection and services adopted in the MMRP for the 2011 Approved Project.</p>
Objective J-2: Disaster Response – Identify actions that the City, in conjunction with other jurisdictions, must take to reduce the severity of disasters.	
<p>Policy (a): Ensure that developments will be properly served by police and fire service (p. J-4).</p>	<p>Consistent: The provision of fire and police services for the 2012 Modified Project is addressed in Section 5.10, <i>Public Services</i>, of this DSSEIR. As concluded in Section 5.10, development of the 2012 Modified Project would not significantly impact service levels for OCFA or the City's Police Department. Individual development projects would also be required to comply with the PPPs and mitigation measures related to fire and police services outlined in the 2011 Certified EIR and reproduced in Section 5.10. See also above response to Policy (e) of Objective J-1.</p>
<p>Policy (b): Ensure that each development will have adequate emergency ingress and egress (p. J-4).</p>	<p>Consistent: The provision of adequate emergency ingress and egress for fire and police services and emergency plans are addressed in Sections 5.5, <i>Hazards and Hazardous Materials</i>, and 5.10, <i>Public</i></p>

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	<p><i>Services</i>, of this DSSEIR. The PPPs outlined in the 2011 Certified EIR and reproduced in Section 5.10 would ensure that individual project developments would provide adequate ingress and egress for emergency services and vehicles. For example, as outlined in PPP 10-1, prior to authorization to use, occupy, and/or operate, individual project applicants are required to arrange for and pass an inspection, to be performed by the Irvine Police Department and OCFA, to ensure compliance with the Emergency Access Plan requirements. The inspector is required to verify test acceptance and locations of all Knox boxes and key switches as depicted on the approved plan.</p>
Parks and Recreation Element	
<p>Objective K-1: Recreational Opportunities – Provide for a broad spectrum of recreational opportunities and park facilities, in either public or private ownership, to accommodate a variety of types and sizes of functions.</p>	
<p>Policy (a): Provide community parks which serve residents of a PA to citywide level by providing facilities appropriate for citizens of various ages and interests, such as (p. K-5):</p> <ul style="list-style-type: none"> • Community centers • Athletic facilities • Competition level swimming pools • Picnic areas • Cultural centers • Day care centers <p>Policy (c): Provide neighborhood parks that respond to recreational needs at a local level (p. K-5).</p> <p>Policy (d): Strongly advocate the creation of homeowners associations as a way to encourage the ownership and maintenance of private neighborhood parks (p. K-5).</p> <p>Policy (e): Ensure that public parks are developed with recreational amenities such as active play areas, passive open space, picnic facilities, and athletic fields and courts per standards identified in the Community Parks Master Plan (p. K-5).</p>	<p>Consistent: The provision of neighborhood park needs by the 2012 Modified Project is addressed in Section 5.11, <i>Recreation</i>, of this DSSEIR. The adoption of the Amended and Restated Development Agreement (ARDA) (Ordinance No. 09-09) specified that the community park dedication requirement for residential developments in the Proposed Project Site was satisfied through the dedication of land and money for the Great Park. While the community park requirements have been satisfied, it is incumbent upon the City to insure the Great Park, in consultation with Community Services staff, provides appropriate community park facilities and programming for residents.</p> <p>The 2012 Modified Project would encompass a walkable, community-oriented development that includes neighborhood parks, and other community-oriented facilities and uses. Subsequent Comprehensive Park Plan and Park Designs for the Proposed Project Site would demonstrate how the 2012 Modified Project's development would meet the City's neighborhood park facilities requirements and the subsequent Master Plans for the Proposed Project Site would establish design relative to trails, landscaping, parks and fencing. The 2012 Modified Project would include several neighborhood parks, in addition to the above-specified open space and recreation use acreage, to meet City requirements for neighborhood park space.</p> <p>Subsequent Vesting Tentative Tract Maps, Master Plans and Comprehensive Park Plans and Park Designs for the Proposed Project Site would be in compliance with City requirements and the adopted Master Landscape and Trails Plan, and would allow for the development of a number of key pathways and trails that are a part of the interconnected master trails plan at the Proposed Project Site. Furthermore, the residential and non-residential land uses of the 2012 Modified Project would be designed and located in a manner that would tie into and enhance the overall development of the Proposed Project Site and Great Park, including the open space, recreational and institutional areas and uses.</p> <p>Finally, implementation of the 2012 Modified Project would not preclude the adaptive reuse of a number of existing facilities associated with the former MCAS El Toro. For example, aviation hangars located in the southern portion of Existing PA 51 could be reused as museum, sports, or cultural facilities.</p>

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	Appropriate community/home owner associations, maintenance, or other districts would be formed and established throughout the various areas of the Proposed Project Site in accordance with the ARDA, as appropriate, in order to address the ownership and maintenance responsibilities for private amenities.
Objective K-2: Park Dedication – Require developers of residential land to dedicate land or fees for parks, consistent with the Quimby Act, Subdivision Map Act, Irvine Subdivision and Zoning Ordinances and General Plan standards.	
<p>Policy (d): Require park land dedicated by developers to meet minimum improvement standards to ensure functional use of land. Use the Local Park Code as the standard for design and siting of neighborhood parks (p. K-6).</p> <p>Policy (g): Ensure parks developed in new residential communities, including areas to be annexed, include a balance of amenities comparable to facilities provided in existing neighborhoods with private and public facilities. Such amenities may include, but are not limited to, swimming pools, club houses, and tennis courts (p. K-6).</p>	Consistent: See above responses to Policies (a), (c), and (e) of Objective K-1.
Objective K-3: Park Location – Locate park and recreation facilities for safe and easy access by their intended users.	
<p>Policy (a): Require proposed park locations to be reviewed at the time of tentative tract approval to ensure safe and easy access for occupants of surrounding land uses (p. K-7).</p> <p>Policy (b): Locate parks adjacent to school sites and other public facilities when feasible to reduce development and operating costs (p. K-7).</p>	Consistent: Subsequent Comprehensive Park Plans and Park Designs and Vesting Tentative Tract Maps and Master Plans for the Proposed Project Site would be need to be submitted and approved by the City to cover required neighborhood park facilities for the Proposed Project Site. Through these future plans, the Proposed Project Site would include several neighborhood parks to meet City requirements for neighborhood park space. In conjunction with the future review of Vesting Tentative Tract Maps, Comprehensive Park Plans and Park Designs are required to be reviewed by the City's Community Development Department to ensure that safe and easy access for occupants of surrounding land uses would be provided.
Conservation and Open Space Element	
Objective L-2: Biotic Resources – Maintain and preserve areas with significant and diverse biotic communities.	
Policy (e): Maintain significant riparian areas in preservation areas as natural corridors and sources of shelter, except where required for infrastructure (p. L-11).	Consistent: As discussed in the 2011 Certified EIR and Section 5.11, <i>Recreation</i> , of this DSSEIR, the 2011 Approved Project includes approximately 1,475 acres, or 2.3 square miles, of open space and recreation uses. The total acreage includes areas that would be managed as wildlife and drainage corridors and/or for passive recreation, as well as areas that would be developed for active recreation. Implementation of the 2012 Modified Project would not impede development of the various recreation and open space elements of the General Plan and OCGPMP. The proposed location of the Relocated Wildlife Corridor Feature, adjacent to Borrego Canyon Channel, is consistent with maintaining preservation areas as natural corridors and sources of shelter. The overall acreage of the Approved Wildlife Corridor Feature will remain the same; the 2012 Modified Project only proposes to relocate a portion of it.

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Objective L-8: Preservation Areas – Maintain and preserve large, contiguous areas which contain significant multiple hazards and resources.	
Policy (i): Maintain significant riparian areas in preservation areas as natural corridors, sources of shelter, and water for wildlife (p. L-18).	Consistent: See above response to Policy (e) of Objective L-2.
Growth Management Element	
Objective M-3: Roadway Maintenance and Capacity Enhancement – Continue to implement the City’s pavement management program, and pursue all funding options available to meet the rehabilitation needs of the City infrastructure and minimize the deferred maintenance of City streets. Further, future development shall contribute its “fair share: towards the improvement of the local transportation system and the regional roadway network.	
<p>Policy (d): Ensure that development contributes its “fair share” to the improvement of the local transportation system and the regional roadway network by constructing necessary roadway improvements through identified mitigation measures and/or payment of circulation improvement fees through established mitigation fee programs (p. M-6).</p> <p>Policy (g): Require, as a condition of new development, that specific roadway improvements needed to maintain appropriate Level of Service standards be completed no later than five years from the date of issuance of the first grading permit or three years from the date of issuance of the first building permit or pursuant to an approved phasing program (p. M-6).</p>	<p>Consistent: The 2012 Modified Project’s impacts on the transportation and circulation system are detailed in Section 5.12, <i>Transportation and Traffic</i>, of this DSSEIR. A detailed traffic study was also conducted for the 2012 Modified Project and is included in Appendix K of this DSSEIR and summarized in Section 5.12.</p> <p>Future development would be required to comply with mitigation measures adopted by the MMRP for the 2011 Approved Project associated with transportation and circulation, which are reproduced in Section 5.12 of this DSSEIR. For example, the 2012 Modified Project would be required to comply with all North Irvine Transportation Improvement (“NITM”) program requirements applicable to development of the Proposed Project Site. Adherence to the PPPs and mitigation measures outlined in the 2011 Certified EIR and incorporated into Section 5.12 would ensure that adequate levels of service would be maintained.</p>
Objective M-4: Transportation Demand Management – Provide and encourage the use of a full range of alternative modes of transportation including transit systems.	
Policy (a): Support programs promulgated in the Air Quality Management Plan (AQMP) and City programs such as Spectrumotion and the Trip Reduction Facilities Ordinance which are aimed at increasing the vehicle occupancy rate and reducing vehicle trips and vehicle miles traveled (VMT) (p. M-7).	<p>Consistent: The 2012 Modified Project involves the placement of new housing in close proximity to existing and future jobs, which would serve to reduce VMT for residents and employees in the vicinity. Additionally, elements will be incorporated into the design of the 2012 Modified Project to encourage the use of alternate modes of transportation, such as trail linkages, access to public transportation, and placing public services and retail services within walking distance of the residential community.</p> <p>Future development would also be required to comply with the transportation and circulation mitigation measures of the 2011 Certified EIR and associated MMRP, which are reproduced in Section 5.12 of this DSSEIR. For example, as outlined in Mitigation Measure TRAN 1, future non-residential development shall participate in an existing or future transportation management association to reduce traffic, air quality and noise impacts.</p>

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<p>Policy (b): Require the applicants of new development to submit, at the time tentative tract map submittal or conditional use permit or master plan review, pedestrian and bicycle circulation plans detailing such access to the subject and adjacent properties in accordance with the Land Use, Conservation and Open Space, Urban Design, and Circulation Elements of the General Plan (p. M-8).</p>	<p>Consistent: Subsequent Tentative Tract Maps, Master Plans and Comprehensive Park Plan and Park Designs for the Proposed Project Site would be in compliance with City requirements and the adopted Master Landscape and Trails Plan and would allow for the development of a number of key pathways and trails that are a part of the Proposed Project Site's interconnected master trails plan and would link schools, shopping centers, and other public facilities with residences. The trail system would also be designed to accommodate cyclists of all levels of experience and would connect to other existing pedestrian and bicycle trails in the vicinity of the Proposed Project Site, including those along Irvine Boulevard and Sand Canyon Parkway. A wide range of on- and off-street bicycle paths would be accommodated along the 2012 Modified Project's roadways and throughout other open space and recreation areas of the Proposed Project Site and OCGP. The 2012 Modified Project's comprehensive pedestrian and bicycle linkage system would be created to not only provide an important and convenient linkage system throughout the Proposed Project Site, but also to surrounding PAs, public open space outside the Proposed Project Site, and other nearby areas and land uses.</p>
<p>Policy (d): Prohibit parking on all thruways, parkways, and community collectors to increase the traffic capacity of these arterials (p. M-8).</p>	<p>Consistent: Parking regulations and provisions within the Proposed Project Site will comply with the City's requirements.</p>
<p>Objective M-5: Transit Systems and Service – Provide adequate transit services and opportunities.</p>	
<p>Policy (g): Plan commercial, industrial, and residential areas so that the use of transit systems could be implemented if and when deemed viable (p. M-9).</p> <p>Policy (h): Provide direct and convenient pedestrian access from the interior of PAs to public transit stops (p. M-9).</p>	<p>Consistent: The Proposed Project Site is served by OCTA bus lines. Bus stops are provided along various points of the OCTA bus routes, which include Alton Parkway, Barranca Parkway, and Irvine Boulevard. Any new bus stops to serve the 2012 Modified Project will be coordinated with OCTA. The 2012 Modified Project's comprehensive trails system would provide opportunities for residents of the 2012 Modified Project to walk or bike to the various bus stops. Additionally, the 2012 Modified Project is near the Irvine Station, which serves as a train station for Metrolink and AMTRAK. The 2012 Modified Project would consist of residential development located in close proximity to the primary transit center. Additionally, the 2012 Modified Project's comprehensive trails system would provide opportunities for residents of the 2012 Modified Project to walk or bike to the Irvine Station.</p>
<p>Objective M-6: Balanced Growth – Promote balanced growth of residential and non-residential land uses and supporting public facilities and services.</p>	
<p>Policy (h): Encourage the establishment and development of facilities and services consistent with policies concerning, but not limited to, police/fire facilities, libraries, parks, and flood control as identified in the Public Facilities Element (p. M-11).</p>	<p>Consistent: Section 5.10, <i>Public Services</i>, of this DSSEIR addresses the potential impacts of the 2012 Modified Project on police, fire, schools, and libraries. Water, solid waste, and sewer facilities are discussed in Section 5.13, <i>Utilities and Service Systems</i>, and parks are discussed in Section 5.11, <i>Recreation</i>. As detailed in those sections, the facilities and services necessary to serve the 2012 Modified Project would be provided in accordance with the requirements of each service provider and in accordance with the Public Facilities Element. Additionally, individual development projects would be required to adhere to the PPPs and mitigation measures outlined in the 2011 Certified EIR and associated MMRP and reproduced in Sections 5.10, 5.11 and 5.13 of this DSSEIR.</p>

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Table 5.7-1

General Plan Consistency Analysis

Applicable City of Irvine General Plan Policies	2012 Modified Project Consistency
<p>Objective M-7: Phase Growth – A Comprehensive Phasing Program (“CPP”) shall be prepared to ensure that infrastructure, such as roadways, public facilities, and other services, is provided to commensurate with demand and to ensure that development is phased in a manner which quantitatively links development and infrastructure improvements. Adequate provisions, on a “fair share” basis, for roads, transit, and other public facilities and services including, but not limited to, libraries, police, fire, parks and flood control, shall be identified in the CPP.</p>	
<p>Policy (c): Implement the residential and nonresidential development objectives through the exercise of the City’s zoning power and (p. M-11):</p> <ul style="list-style-type: none"> • Coordinate Land Use Element Objective A-5 and policies to maintain fiscally sound land use planning. • Residential and nonresidential uses shall be developed with consideration given to Circulation Element policies, where appropriate, to maintain adequate circulation capacity and infrastructure. • Ensure that sufficient land is zoned for residential opportunities to achieve the City’s quantified objectives to realize a diversity of housing types and affordability requirements, to meet the development objectives of the Housing Element, and to be compatible with nonresidential objectives. 	<p>Consistent: See above responses to Policy (c) of Objective A-4, Policy (c) of Objective B-1, Policy (a) of Objective C-4, and Policies (d) and (g) of Objective M-3.</p>
<p>Policy (e): Public facility performance standards shall be used to evaluate the availability of and need for public facilities for any proposed development. The performance standards are established as public facility goals and shall be utilized within the Comprehensive Phasing Program. It is not necessary that the performance standards be achieved in all circumstances. The performance standards for fire, police, libraries, flood control, parks and recreation, and schools shall be established by the agency authorized by law to provide those services at the time the development proposal is evaluated by the City (p. M-11).</p>	<p>Consistent: The public facility performance standards identified by respective service providers and/or the City have been outlined throughout the analysis presented in Section 5.10, <i>Public Services</i>, of this DSSEIR. The analysis of project impacts in that section addresses the relationship of the 2012 Modified Project to the identified standards, and no significant impacts have been identified with implementation of PPPs and mitigation measures outlined in the 2011 Certified EIR and associated MMRP and reproduced in Section 5.10 of this DSSEIR. The availability of public services to serve the 2012 Modified Project at various phases of development will be subject to further environmental review during subsequent development processes (e.g., review of tract maps, conditional use permits, master plans).</p>

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SCAG Consistency Analysis

The 2012 Modified Project is considered a project of regionwide significance pursuant to the criteria outlined in SCAG's Intergovernmental Review Procedures Handbook–November 1995 and Section 15206 of the California Environmental Quality Act (CEQA) Guidelines. Therefore, this section addresses the 2012 Modified Project's consistency with the applicable SCAG planning guidelines and policies.

SCAG RCP Consistency Analysis

As previously noted, the 2008 SCAG RCP is an advisory document to local agencies in the southern California region for their information and voluntary use while preparing local plans and handling local issues of regional significance. Table 5.7-2 provides an assessment of the 2012 Modified Project's consistent with advisory and voluntary policies contained in various chapters of the 2008 SCAG RCP. The analysis contained in Table 5.7-2 concludes that the 2012 Modified Project would be consistent with the advisory and voluntary RCP policies. Therefore, implementation of the 2012 Modified Project would not result in significant land use impacts related to those policies.

<i>Table 5.7-2</i>	
<i>Consistency with SCAG's 2008 Regional Comprehensive Plan</i>	
<i>SCAG Policy</i>	<i>2012 Modified Project Compliance</i>
Land Use And Housing Action Plan	
<i>Policy LU-4:</i> Local governments should provide for new housing, consistent with State Housing Element law, to accommodate their share of forecast regional growth.	<i>Consistent:</i> The 2012 Modified Project consists of 4,894 already approved dwelling units plus 4,606 additional dwelling units (3,412 base units and 1,194 DB units). The 2012 Modified Project also includes the option to convert up to 535,000 square feet of Multi-Use to up to 889 base dwelling units and 311 DB units, granted pursuant to State law. The 2012 Modified Project allows for a wide-range of housing types and densities (low, medium and high), including single-family attached and detached and clustered homes, which would accommodate a broad range of income levels and lifestyles and respond to local and regional housing needs. Therefore, the 2012 Modified Project would help the City further meet its RHNA through 2025. The 2012 Modified Project's impact on population and housing is addressed in Section 5.9, <i>Population and Housing</i> , of this DSSEIR.
<i>Policy LU-4.1:</i> Local governments should adopt and implement General Plan Housing Elements that accommodate housing needs identified through the Regional Housing Needs Assessment ("RHNA") process. Affordable housing should be provided consistent with RHNA income category distributions adopted for each jurisdiction. To provide housing, especially affordable housing, jurisdictions should leverage existing State programs such as HCD's Workforce Incentive Program and density bonus law and create local incentives (e.g., housing trust funds, inclusionary zoning, tax-increment-financing districts in redevelopment areas and transit villages) and partnerships with non-governmental stakeholders.	<i>Consistent:</i> See above response to RCP Policy LU-4.

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Consistency with SCAG's 2008 Regional Comprehensive Plan

SCAG Policy	2012 Modified Project Compliance
Policy LU-5: Local governments should leverage federal and State and local funds to implement the Compass Blueprint.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy LU-5.1: All stakeholders should leverage state infrastructure bond financing, including the Department of Housing and Community Development's Transit Oriented Development program and should support legislation that will target infrastructure bond funds for regions with adopted growth visions such as the Compass Blueprint and for projects consistent with these visions.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy LU-5.2: Subregional organizations should leverage the federal transportation planning funds available at the subregional level, to complete projects that integrate land use and transportation planning and implement Compass Blueprint principles.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy LU-6: Local governments should consider shared regional priorities, as outlined in the Compass Blueprint, Regional Transportation Plan, and this Regional Comprehensive Plan, in determining their own development goals and drafting local plans.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy LU-6.1: Local governments should take a comprehensive approach to updating their General Plans, keeping General Plans up-to-date and providing progress reports on updates and implementation, as required by law.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy LU-6.2: Developers and local governments should integrate green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, EnergyStar Homes, Green Point Rated Homes, and the California Green Builder Program.	<p>Consistent: The 2012 Modified Project's impact on energy use is addressed in Sections 5.3, <i>Greenhouse Gas Emissions</i>, and 5.13, <i>Utilities and Service Systems</i>, of this DSSEIR.</p> <p>Pursuant to PDF 4-8, future development within the Proposed Project Site will be constructed so that it achieves 15 percent higher energy efficiency than the applicable standards set forth in the 2008 California Building and Energy Efficiency Standards (Title 24, Part 6 of the California Building Code) or meet the standards in effect at the time of issuance of building permit. Additionally, all nonresidential development would be required to comply with the energy-efficiency requirements outlined in the most recent California Building Code and the PPPs and mitigation measures outlined in the 2011 Certified EIR and associated MMRP and reproduced in Section 5.3 of this DSSEIR. Individual project compliance with current and applicable green-building standards and techniques would be assured during the City's entitlement and building plan check review process.</p> <p>The City's C&D Debris Recycling and Reuse Ordinance requires that 1) all residential projects of more than one unit, 2) nonresidential developments of 5,000 square feet or larger, and 3) nonresidential demolition/renovations with more than 10,000 square feet of building recycle or reuse a minimum of 75 percent of concrete and asphalt and 50 percent of nonhazardous debris generated. Development associated with the 2012 Modified Project would be required to comply with the provisions of this ordinance.</p>

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Consistency with SCAG's 2008 Regional Comprehensive Plan

<i>SCAG Policy</i>	<i>2012 Modified Project Compliance</i>
	<p>Additionally, prior to the issuance of a building permit for development projects under the 2012 Modified Project, development plans will be required to demonstrate that the project meets the 2010 California Building and Energy Efficiency Standards (Title 24, Part 6 of California Code of Regulations), including participation in a green building program. The green building program allows a project applicant to select from a menu of techniques to achieve green building standards, many of which directly or indirectly will support energy conservation.</p> <p>Future development would also be required to comply with mitigation measures adopted in the MMRP for the 2011 Approved Project associated with waste reduction and recycling, which are reproduced in Section 5.13, <i>Utilities and Service Systems</i>, of this DSSEIR.</p> <p>Furthermore, the 2012 Modified Project would follow through on an underlying goal of the 2011 Approved Project of implementing a master-planned community that offers a wide range of non-vehicular modes of transportation, including public transit and trails for pedestrians and bicyclists.</p>
Policy LU-6.3: Local governments and subregional organizations should develop ordinances and other programs, particularly in the older, more urbanized parts of the region, which will enable and assist in the cleanup and redevelopment of brownfield sites.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy LU-6.4: Local governments and subregional organizations should develop adaptive reuse ordinances and other programs that will enable the conversion of vacant or aging commercial, office, and some industrial properties to housing and mixed-use with housing.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Open Space and Habitat – Community Open Space Action Plan	
Policy OSC-7: Local governments should prepare a Needs Assessment to determine the adequate community open space level for their areas.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy OSC-8: Local governments should encourage patterns of urban development and land use, which reduce costs on infrastructure and make better use of existing facilities.	<p>Consistent: The 2012 Modified Project's impact on facilities and infrastructure is addressed in Sections 5.10, <i>Public Services</i>, and 5.13, <i>Utilities and Service Systems</i>, of this DSSEIR. Please refer to Sections 5.10 and 5.13 for a further discussion of how the public services and facilities system would be able to accommodate the land uses and activities contemplated by the 2012 Modified Project.</p> <p>The 2012 Modified Project is a part of the reuse of the former MCAS El Toro, which is intended to redevelop a large property that was previously developed and used for military operations. The 2012 Modified Project is located in and adjacent to an existing urban area, allowing for optimal use of existing facilities, and orderly expansion of facilities, when necessary. The site's proximity to existing facilities and the currently available capacity will minimize the cost of extending infrastructure into the Proposed Project Site.</p>

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Consistency with SCAG's 2008 Regional Comprehensive Plan

SCAG Policy	2012 Modified Project Compliance
	<p>Funding improvements have also been and will be made to the overall former MCAS El Toro to ensure that facility and infrastructure improvements are accomplished in a cost effective manner.</p> <p>The 2012 Modified Project allows for a mix of uses located in close proximity to each other, thereby allowing residents to walk or use alternative transportation methods to access jobs, services, and public facilities. The proposed land use pattern would reduce the impacts upon infrastructure and save costs to local governments.</p>
Policy OSC-9: Developers and local governments should increase the accessibility to natural areas lands for outdoor recreation.	<p>Consistent: The provision of neighborhood park needs by the 2012 Modified Project is addressed in Section 5.11, <i>Recreation</i>, of this DSSEIR. As discussed in the 2011 Certified EIR and in Section 5.11 of this DSSEIR, the 2011 Approved Project includes approximately 1,475 acres, or 2.3 square miles, of open space and recreation uses. The total acreage includes areas that would be managed as wildlife and drainage corridors and/or for passive recreation, as well as areas that would be developed for active recreation.</p> <p>Implementation of the 2012 Modified Project would not impede development of the various recreation and open space elements in the General Plan and OCGPRP. Additionally, the subsequent required Comprehensive Park Plans and Park Designs for the Proposed Project Site would help meet the City's neighborhood park facilities requirement and the 2012 Modified Project's future Master Plans would establish design relative to trails, landscaping, parks and fencing.</p>
Policy OSC-10: Developers and local governments should promote infill development and redevelopment to revitalize existing communities.	<p>Consistent: The 2012 Modified Project is an infill project that is located in a highly urbanized area of Irvine and also adjacent to urbanized areas of the City of Lake Forest. The 2012 Modified Project entails the development of a master-planned community on and reuse of the former MCAS El Toro. The 2012 Modified Project consists of 4,894 already approved dwelling units plus 4,606 additional dwelling units (3,412 base units and 1,194 DB units). The 2012 Modified Project also includes the option to convert up to 535,000 square feet of Multi-Use to up to 889 base residential units and 311 DB units, granted pursuant to State law.</p>
Policy OSC-11: Developers should incorporate and local governments should include land use principles, such as green building, that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms.	<p>Consistent: The CEQA process ensures that plans at all levels of government consider all environmental impacts. Sections 5.3, <i>Air Quality</i>, 5.4, <i>Greenhouse Gas Emissions</i>, and 5.13, <i>Utilities and Service Systems</i>, of this DSSEIR address the potential environmental impacts related to those subject matters. As outlined in those DSSEIR sections, the 2012 Modified Project would adhere to state and federal environmental and climate change policies to comply with strategies to eliminate pollution and reduce waste. See also above response to RCP Policy LU-6.2.</p>

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SCAG Policy	2012 Modified Project Compliance
Policy OSC-12: Developers and local governments should promote water-efficient land use and development.	Consistent: As outlined in the 2011 Certified EIR, the Irvine Ranch Water District determined that a sufficient non-potable water supply is available to serve the 2011 Approved Project. Additionally, as concluded in Section 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR, sufficient non-potable water supply would be available to serve the 2012 Modified Project. As stated in the 2011 Certified EIR, recycled water would be used for park area and landscaping under the 2011 Approved Project. Implementation of the 2012 Modified Project would not impede the provision of recycled water to the Proposed Project Site. Additionally, future development projects would be required to comply with the City's water-efficient landscape requirements.
Policy OSC-13: Developers and local governments should encourage multiple use spaces and encourage redevelopment in areas where it will provide more opportunities for recreational uses and access to natural areas close to the urban core.	Consistent: See above response to RCP Policy OSC-9.
Water Action Plan	
Policy WA-9: Developers and local governments should consider potential climate change hydrology and resultant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year-round use and ecosystem health.	Consistent: See above response to RCP Policy OSC-12. Also, refer to Section 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR for a further discussion of water supply and reliability.
Policy WA-10: Developers and local governments should include conjunctive use as a water management strategy when feasible.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-11: Developers and local governments should encourage urban development and land uses to make greater use of existing and upgraded facilities prior to incurring new infrastructure costs.	Consistent: See above response to RCP Policy OSC-8.
Policy WA-12: Developers and local governments should reduce exterior uses of water in public areas, and should promote reduced use in private homes and businesses, by shifting to drought-tolerant native landscape plants (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.	Consistent: See above response to RCP Policy OSC-12.
Policy WA-13: Developers and local governments should protect and preserve vital land resources—wetlands, groundwater recharge areas, woodlands, riparian corridors, and production lands. The federal government's 'no net loss' wetlands policy should be applied to all of these land resources.	Consistent: The 2011 Certified EIR acknowledged the loss of some biological resources. Those impacts are the same for the 2012 Modified Project. However, impacts to biological resources will be mitigated to a level of less than significant with project design features included in the SSEIR and MMRP for the 2012 Modified Project, which will also apply to the 2012 Modified Project. The establishment of the Drainage Corridor will contribute to important wetland resources within the Proposed Project Site. Additionally, the most significant ecological areas will be preserved within the Habitat Preserve and Drainage/Riparian Corridor. The Relocated Wildlife Corridor Feature, which will be adjacent to the Borrego Canyon Channel, will protect vital land resources. Implementation of the 2012 Modified Project would not impede the City from developing the above-described areas and it would be done in compliance with

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SCAG Policy	2012 Modified Project Compliance
	mitigation measures included in the MMRP for the 2011 Approved Project associated with biology-related impacts and with the project design features of the 2011 Approved Project.
Policy WA-14: Local governments should amend building codes to require dual plumbing in new construction, and provide incentives for plumbing retrofits in existing development, to enable the safe and easy use of recycled water in toilets and for landscaping.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-15: Local governments should amend ordinances as necessary to allow municipal and private outdoor use of recycled water for all parks, golf courses, and outdoor construction needs.	Not Applicable: This is not a project-specific policy and is therefore not applicable. However, see above response to RCP Policy OSC-12.
Policy WA-16: Water agencies should incentivize the use of recycled water through pricing structures that make it an attractive alternative to fresh water in non-potable situations.	Not Applicable: This is not a project-specific policy and is therefore not applicable. However, see above response to RCP Policy OSC-12.
Policy WA-17: Water agencies should reduce salinity and remove contamination in major groundwater basins to increase conjunctive use of water resources and extend groundwater storage unless specific beneficial uses for contaminated groundwater are identified.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-18: Local governments should create stable sources of funding for water and environmental stewardship and related infrastructure sustainability, including purchase and implementation of green infrastructure.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-19: Water purveyors should develop and implement tiered water pricing structures to discourage water waste and minimize polluting runoff.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-20: Local governments should use both market and regulatory incentive mechanisms to encourage 'water wise' planning and development, including streamlining and prioritizing projects that minimize water demand and improve water use efficiencies.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-21: Local governments should develop comprehensive partnership approaches to remove and prevent water impairments, replacing the existing regulatory command and control approach that has created delays and distrust.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-22: Local governments should create opportunities for pollution reduction marketing and other market-incentive water quality programs.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-23: Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage runoff flows caused by storms and impervious surfaces.	<p>Consistent: The 2012 Modified Project's impacts on hydrology and water quality are analyzed in Section 5.6, <i>Hydrology and Water Quality</i>, of this DSSEIR.</p> <p>As outlined in Section 5.6 of this DSSEIR, individual project applicants under the 2012 Modified Project will be required to comply with all local, state and federal requirements related to water quality, including the NPDES requirements established by the State Water Resources Control Board. Additionally, City Standard Subdivision Condition 2.13 requires project applicants to submit, and the Director of Community Development to approve, a WQMP prior to the issuance of precise grading permits. The WQMP is required</p>

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SCAG Policy	2012 Modified Project Compliance
	<p>to identify the BMPs that would be used on individual development sites to control predictable pollutant runoff.</p> <p>Mitigation measures adopted in the MMRP for the 2011 Approved Project related to hydrology and water quality are reproduced in Section 5.6 of this DSSEIR. Those mitigation measures are applicable to development within the 2012 Modified Project.</p>
Policy WA-24: Local governments should prevent development in flood hazard areas lacking appropriate protections, especially in alluvial fan areas.	<p>Consistent: The potential impacts from flood hazards on the 2012 Modified Project are analyzed in Section 5.6, <i>Hydrology and Water Quality</i>, of this DSSEIR.</p> <p>Future development projects would be required to comply with the provisions of the most recent version of the California Building Code as amended by the City. Additionally, future development would be required to comply with mitigation measures adopted in the MMRP for the 2011 Approved Project associated with hydrology, which are reproduced in Section 5.6 of this DSSEIR. For example, in compliance with Mitigation Measure H/WQ3, detailed hydrologic and hydraulic analyses have been conducted. Studies and analyses shall be prepared in accordance with Orange County Flood Control District methodologies and standards and the Flood Control Master Plan for San Diego Creek, as well as any additional guidelines in effect at the time of project design. Recommendations contained in the hydrology studies and/or hydraulic analysis to address drainage/flooding issues related to proposed development shall be implemented.</p>
Policy WA-25: Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-26: Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, and conversion of impervious surfaces, to maximize benefits and share costs.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-27: Developers and local governments should maximize pervious surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.	<p>Consistent: The 2012 Modified Project's impacts on hydrology are analyzed in Section 5.6, <i>Hydrology and Water Quality</i>, of this DSSEIR.</p> <p>Through the ARDA, Heritage Fields has dedicated a total of 1,790 acres for open space and recreation area that would be mostly permeable. Additionally, the City's Drainage Area Master Plan ("DAMP") requires that increased surface flow due to increased impervious surfaces be minimized. The DAMP requires that BMPs be implemented in order to reduce increased runoff to storm drains. The ARDA also proposes flood control facilities and natural treatment systems that would control runoff onsite. Implementation of the 2012 Modified Project would be subject to the DAMP provision and would not impede the City from developing the necessary flood control facilities. See also response to RCP Policy WA-23.</p>

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SCAG Policy	2012 Modified Project Compliance
Policy WA-28: Local governments should maintain and update Best Management Practices for water resource planning and implementation.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-29: Local governments should coordinate with neighboring communities and watershed stakeholders to identify potential collaborative mitigation strategies at the watershed level to properly manage cumulative impacts within the watershed.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-30: Local governments should adopt MOUs and JPAs among local entities to establish participation in the leadership and governance of integrated watershed planning and implementation.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-31: Local governments should increase participation in the implementation of integrated watershed management plans, including planning effort initiated in neighboring communities that cross jurisdictional lines.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy WA-32: Developers and local governments should pursue water management practices that avoid energy waste and create energy savings/supplies.	Consistent: See above response to RCP Policy LU-6.2.
Energy Action Plan	
Policy EN-8: Developers should incorporate and local governments should include the following land use principles that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms: <ul style="list-style-type: none"> • Mixed-use residential and commercial development that is connected with public transportation and utilizes existing infrastructure. • Land use and planning strategies to increase biking and walking trips. 	Consistent: See above responses to RCP Policies OSC-8 and OSC-9. Additionally, the proposed 8.1 Trails and Transit Oriented Development zoning designation will allow all of the uses that are currently permitted in Existing PAs 30 and 51 in zones 3.2 Transit Oriented Development, 4.3 Vehicle-Related Commercial, and 5.4 General Industrial, which include residential, commercial, and educational uses in proximity to enhanced transit and pedestrian activity, thereby promoting and supporting a synergistic live/learn/work/play environment. Specific uses that serve to enhance the cultural, educational, and recreational environment are especially encouraged in these areas. By allowing a mix of uses that are complementary to each other and in proximity to one another would help reduce the reliance on the automobile and increase the opportunities for the use of alternative modes of transportation, including biking and walking.
Policy EN-9: Local governments should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. SCAG recommends the use of Appendix F, Energy Conservation, of the California Environmental Quality Act.	Consistent: Sections 5.4, <i>Greenhouse Gas Emissions</i> , and 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR include detailed energy analysis and also outline a number of PPPs and mitigation measures adopted in the MMRP for the 2011 Approved Project would assist in conserving energy. For example, as outlined in PPP 4-7, EnergyStar appliances (excluding refrigerators) shall be offered or installed in all residential dwelling units. Pursuant to PDF 4-8, future development within the Proposed Project Site will be constructed so that it achieves 15 percent higher energy efficiency than the applicable standards set forth in the 2008 California Building and Energy Efficiency Standards (Title 24, Part 6 of the California Building Code) or meet the standards in effect at the time of issuance of building permit. The Energy Commission has adopted 2013 Building Energy Efficiency Standards that are 25 percent more efficient than the 2010 standards for residential construction and 30 percent more efficient for nonresidential construction. The

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SCAG Policy	2012 Modified Project Compliance
	2013 Energy Efficiency Standards, which take effect on January 1, 2014, offer builders better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses. See also above response to RCP Policy LU-6.2.
<p>Policy EN-10: Developers and local governments should integrate green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. Energy saving measures that should be explored for new and remodeled buildings include:</p> <ul style="list-style-type: none"> • Using energy efficient materials in building design, construction, rehabilitation, and retrofit. • Encouraging new development to exceed Title 24 energy efficiency requirements. • Developing Cool Communities measures including tree planting and light-colored roofs. These measures focus on reducing ambient heat, which reduces energy consumption related to air conditioning and other cooling equipment. • Utilizing efficient commercial/residential space and water heaters: This could include the advertisement of existing and/or development of additional incentives for energy efficient appliance purchases to reduce excess energy use and save money. Federal tax incentives are provided online. • Encouraging landscaping that requires no additional irrigation: utilizing native, drought tolerant plants can reduce water usage up to 60 percent compared to traditional lawns. • Encouraging combined heating and cooling (CHP), also known as cogeneration, in all buildings. • Encouraging neighborhood energy systems, which allow communities to generate their own electricity. • Orienting streets and buildings for best solar access. • Encouraging buildings to obtain at least 20% of their electric load from renewable energy. 	<p>Consistent: See above response to RCP Policy LU-6.2.</p>
<p>Policy EN-11: Developers and local governments should submit projected electricity and natural gas demand calculations to the local electricity or natural gas provider, for any project anticipated to require substantial utility consumption. Any infrastructure improvements necessary for project construction should be completed according to the specifications of the energy provider.</p>	<p>Not Applicable: Projected electricity and natural gas demands for the 2012 Modified Project are provided in Section 5.13, <i>Utilities and Service Systems</i>, of this DSSEIR. As explained in section 5.13, the 2012 Modified Project is not anticipated to have a significant impact related to electricity or natural gas. Further, compliance with the Title 24 Building Energy Efficiency Standards shall be demonstrated prior to issuance of any building permit for development on the Proposed Project Site.</p>
<p>Policy EN-12: Developers and local governments should encourage that new buildings are able to incorporate solar panels in roofing and tap other renewable energy sources to offset new demand on conventional power sources.</p>	<p>Consistent: See above response to RCP Policy LU-6.2.</p>

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Consistency with SCAG's 2008 Regional Comprehensive Plan

SCAG Policy	2012 Modified Project Compliance
Policy EN-13: Local governments should support only the use of the best available technology including monitoring air, and water impacts for locating any nuclear waste facility.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy EN-14: Developers and local governments should explore programs to reduce single occupancy vehicle trips such as telecommuting, ridesharing, alternative work schedules, and parking cash-outs.	Consistent: See above response to RCP Policy EN-8.
Policy EN-15: Utilities and local governments should consider the most cost-effective alternative and renewable energy generation facilities.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy EN-16: Local governments and project implementation agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as: <ul style="list-style-type: none"> • Encouraging investment in transit, including electrified light rail • Expanding light-duty vehicle retirement programs • Increasing commercial vehicle fleet modernization • Implementing driver training module on fuel consumption • Replacing gasoline powered mowers with electric mowers • Reducing idling from construction equipment • Incentivizing alternative fuel vehicles and equipment • Developing infrastructure for alternative fueled vehicles • Increasing use and mileage of High Occupancy Vehicle (HOV), High Occupancy Toll (HOT) and dedicated Bus Rapid Transit (BRT) lanes • Implementing truck idling rule, devices, and truck-stop electrification • Requiring electric truck refrigerator units • Reducing locomotives fuel use • Modernizing older off-road engines and equipment • Implementing cold ironing at ports • Encouraging freight mode shift • Limit use and develop fleet rules for construction equipment • Requiring zero-emission forklifts • Developing landside port strategy: alternative fuels, clean engines, electrification 	Consistent: See above response to RCP Policies LU-6.2 and EN-8.
Policy EN-17: Utilities should consider increasing capacity of existing transmission lines, where feasible.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy EN-18: Utilities should install and maintain California Best Available Control Technologies on all power plants at the US-Mexico border.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy EN-19: Subregional and local governments should explore participation in energy efficiency programs provided by their local utility such as the Ventura Regional Energy Office, South Bay Energy Savings Center, and the San Gabriel Valley Energy Wise program. These programs can offer customized incentives and public awareness campaigns to reduce energy consumption.	Not Applicable: This is not a project-specific policy and is therefore not applicable.

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LAND USE AND PLANNING

Table 5.7-2

Consistency with SCAG's 2008 Regional Comprehensive Plan

SCAG Policy	2012 Modified Project Compliance
Air Quality Action Plan	
<p>Policy AQ-5: Local governments should implement control measures from local Air Quality Management Plans ("AQMPs") such as accelerating the turnover of older, more polluting mobile and stationary source equipment using AB 2766 funding per the State Implementation Plan ("SIP").</p>	<p>Consistent: Section 5.3, <i>Air Quality</i>, of this DSSEIR includes a detailed analysis of the air quality impacts due to development of the 2012 Modified Project. Section 5.3 outlines a number of PPPs, PDFs and mitigation measures included in the MMRP for the 2011 Approved Project that would assist in reducing air quality impacts and assist the City in implementing control measures.</p> <p>For example, as outlined in PPP 3-1, SCAQMD requires developers who build, install, or replace any equipment or agricultural permit unit, which may cause new emissions of or reduce, eliminate, or control emissions of air contaminants to obtain a permit to construct from the Executive Officer.</p> <p>PDF 4-7 states that EnergyStar appliances (excluding refrigerators), such as dishwashers, clothes washers, clothes dryers, air conditions, furnaces and water heaters, shall be offered or installed in all residential dwelling units.</p> <p>As outlined in Mitigation Measure AQ3, prior to the issuance of building permits for any future development, the applicant shall submit, and Director of Community Development shall have approved, an operation-emissions mitigation plan. The plan shall identify implementation procedures for each of the following emissions reduction measures and all feasible mitigation measures shall be implemented. If certain measures are determined infeasible, an explanation thereof shall be provided.</p> <ul style="list-style-type: none"> • Utilize built-in energy-efficient appliances to reduce energy consumption and emissions. • Utilize energy-efficient and automated controls for air conditioners and lighting to reduce electricity consumption and associated emissions. • Install special sunlight-filtering window coatings or double-paned windows to reduce thermal loss, whenever feasible. • Utilize light-colored roofing materials as opposed to dark roofing materials to conserve electrical energy for air-conditioning. • Provide shade trees in residential subdivisions as well as public areas, including parks, to reduce building heating and cooling needs, whenever feasible. • Ensure that whenever feasible, commercial truck traffic is diverted from local roadways to off-peak periods. • Centralize space heating and cooling for multiple-family dwelling units and commercial space.
<p>Policy AQ-6: Local governments should support and pursue environmentally sustainable strategies that implement and complement climate change goals and outcomes such as updating their General Plans to help address the State's AB 32 mandate. This should be consistent with state guidelines</p>	<p>Not Applicable: This is not a project-specific policy and is therefore not applicable.</p>

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LAND USE AND PLANNING

Table 5.7-2

Consistency with SCAG's 2008 Regional Comprehensive Plan

SCAG Policy	2012 Modified Project Compliance
and requirements.	
Policy AQ-7: Local governments should develop policies that discourage the location of sensitive receptors that expose humans to adverse air quality impacts such as amending General Plans, zoning ordinances, business licensing, and related land use permitting processes to minimize human health impacts from exposure of sensitive receptors to local sources of air pollution. Jurisdictions should consider applicable guidance documents, such as ARB's Air Quality and Land Use Handbook: A Community Health Perspective and the South Coast AQMD's Guidance Document for Addressing Air Quality Issues.	Consistent: The 2012 Modified Project's air quality impacts are addressed in Section 5.3, <i>Air Quality</i> , of this DSSEIR. As concluded in Section 5.3, the 2012 Modified Project would not expose sensitive receptors to substantial concentrations of air pollutants. Additionally, future development within the Proposed Project Site would be required to comply with mitigation measures included in the MMRP for the 2011 Approved Project related to air quality, which are reproduced in Section 5.3 of this DSSEIR. For example, as outlined in Mitigation Measure AQ3, prior to the issuance of building permits for any future development, the applicant shall submit, and Director of Community Development shall have approved, an operation-emissions mitigation plan. The plan shall identify implementation procedures for each of the listed emissions reduction measures and all feasible mitigation measures shall be implemented.
Policy AQ-8: Local governments should practice and promote sustainable building practices by:	Consistent: See responses to individual AQ-8 policies below (i.e., AQ-8.1, AQ-8.2, and AQ-8.3).
Policy AQ-8.1: Updating their General Plans and/or zoning ordinances to promote the use of green building practices, which include incorporating LEED design standards and utilizing energy efficient, recycled-content and locally harvested or procured materials.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy AQ-8.2: Developing incentive programs (e.g. density bonuses) to encourage green building and resource and energy conservation in development practices.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy AQ-8.3: Adopting policies that strive for carbon neutrality for their own facilities and operations	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Solid Waste Action Plan	
Policy SW-9: Local governments should update general plans to reflect solid waste sustainability issues such as waste reduction goals and programs (1996 RCP; 135).	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy SW-10: Local governments should discourage the siting of new landfills unless all other waste reduction and prevention actions have been fully explored. If landfill siting or expansion is necessary, landfills should be sited with an adequate landfill-owned, undeveloped land buffer to minimize the potential adverse impacts of the landfill in neighboring communities.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy SW-11: Local governments should discourage exporting of locally generated municipal solid waste (destined for landfills) outside of the SCAG region. Disposal within the county where the waste originates should be encouraged as much as possible, when appropriate. Green technologies for long-distance transport of waste (e.g., clean engines, clean locomotives or electric rail for waste-by-rail disposal systems) and consistency with AQMP and RTP policies should be required.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy SW-12: Local governments should maximize waste diversion goals and practices and look for opportunities for voluntary actions to exceed the 50% waste diversion target.	Not Applicable: This is not a project-specific policy and is therefore not applicable.

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LAND USE AND PLANNING

Table 5.7-2

Consistency with SCAG's 2008 Regional Comprehensive Plan

SCAG Policy	2012 Modified Project Compliance
Policy SW-13: Local governments should build local markets for waste prevention, reduction, and recycling practices.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
<p>Policy SW-14: Developers and local governments should integrate green building measures into project design and zoning including, but not limited to, those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. Construction reduction measures to be explored for new and remodeled buildings include:</p> <ul style="list-style-type: none"> • Reuse and minimization of C&D debris and diversion of C&D waste from landfills to recycling facilities. • An ordinance that requires the inclusion of a waste management plan that promotes maximum C&D diversion. • Source reduction through (1) use of building materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed building materials, and (5) use of structural materials in a dual role as finish material (e.g. stained concrete flooring, unfinished ceilings, etc.). • Reuse of existing building structure and shell in renovation projects. <p>Building lifetime waste reduction measures that should be explored for new and remodeled buildings including:</p> <ul style="list-style-type: none"> • Development of indoor recycling program and space. • Design for deconstruction. • Design for flexibility through use of moveable walls, raised floors, modular furniture, moveable task lighting and other reusable components. 	<p>Consistent: See above responses to RCP Policies LU-6.2, OSC-12, and SW-17.</p>
Policy SW-15: Local governments should develop ordinances that promote waste prevention and recycling such as: requiring waste prevention and recycling efforts at all large events and venues; implementing recycled content procurement programs; and instituting ordinances to divert food waste away from landfills and toward food banks and composting facilities.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy SW-16: Local governments should support environmentally friendly alternative waste management strategies such as composting, recycling, and conversion technologies.	Consistent: The City has regulations relating to alternative waste management strategies such as recycling with which activities under the 2012 Modified Project must comply. See above response to RCP Policy LU-6.2.
Policy SW-17: Developers and local governments should develop and site composting, recycling, and conversion technology facilities that are environmentally friendly and have minimum environmental and health impacts.	Consistent: Section 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR includes a detailed analysis of solid waste and recycling impacts and also outlines a number of PPPs and incorporates mitigation measures included as part of the MMRP for the 2011 Approved Project associated with waste reduction and recycling. Those PPPs and mitigation measures would assist in minimizing impacts on the environment and conserving natural resources. For example, since the 2012 Modified Project would result in new construction that would generate solid waste, efforts would be made to recycle in order to reduce environmental impacts.

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Table 5.7-2 Consistency with SCAG's 2008 Regional Comprehensive Plan	
SCAG Policy	2012 Modified Project Compliance
	<p>As outlined, for example, in PPP 13-7, prior to the issuance of grading permits for a project that involves the demolition of an asphalt or concrete parking lot onsite, the applicant shall submit a waste management plan demonstrating compliance with the requirements of Title 6, Division 7 of the City of Irvine Municipal Code relating to recycling and diversion of demolition waste as applicable to said project. Over the course of demolition or construction, the applicant shall ensure compliance with all code requirements related to the use of City-authorized waste haulers.</p> <p>Additionally, as a standard City requirement, the City's Environmental Programs staff and Waste Management of Orange County would review individual project developments during the discretionary application review to ensure that solid waste facilities are adequately designed and ample opportunities for recycling are provided. Future development within the Proposed Project Site would also be required to comply with mitigation measures included in the MMRP for the 2011 Approved Project associated with waste reduction and recycling, which are reproduced in Section 5.13 of this DSSEIR.</p>
Policy SW-18: Developers and local governments should coordinate regional approaches and strategic siting of waste management facilities.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy SW-19: Developers and local governments should facilitate the creation of synergistic linkages between community businesses and the development of eco-industrial parks and materials exchange centers where one entity's waste stream becomes another entity's raw material by making priority funding available for projects that involve co-location of facilities.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy SW-20: Developers and local governments should prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities near existing waste management or material recovery facilities.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Policy SW-21: Local governments should increase education programs to increase public awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the County and City level and if appropriate, at local school districts and education facilities.	Not Applicable: This is not a project-specific policy and is therefore not applicable.
Source: 2008 SCAG Regional Comprehensive Plan	

SCAG 2012 RTP/SCS Consistency Analysis

Table 5.7-3 provides an assessment of the 2012 Modified Project's consistency with pertinent SCAG 2012 RTP/SCS goals. The analysis contained in Table 5.7-3 demonstrates that the 2012 Modified Project would be consistent with the applicable RTP/SCS goals. Therefore, implementation of the 2012 Modified Project would not result in significant land use impacts related to relevant SCAG policies, goals, and principles, as compared to the 2011 Approved Project.

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LAND USE AND PLANNING

Table 5.7-3

*Consistency with SCAG's 2012 Regional Transportation Plan/
Sustainable Communities Strategy Goals*

<i>RTP Goals</i>	<i>Modified Project Compliance</i>
RTP G1: Align plan investments and policies with improving regional economic development and competitiveness.	Not Applicable: This is not a project-specific goal and is therefore not applicable.
RTP G2: Maximize mobility and accessibility for all people and goods in the region. RTP G3: Ensure travel safety and reliability for all people and goods in the region. RTP G4: Preserve and ensure a sustainable regional transportation system. RTP G5: Maximize the productivity of our transportation system.	<p>Consistent: As outlined in the 2011 Certified EIR and associated MMRP and in Section 5.12, <i>Transportation and Traffic</i>, of this DSSEIR, compliance with the NITM and implementation of proposed improvements and mitigation measures will ensure that intersections in the vicinity of the Proposed Project Site will operate at acceptable levels of service, so long as other jurisdictions implement all of the identified mitigation measures that are outside of the City's jurisdiction. The 2012 Modified Project is also located adjacent to I-5 and in proximity of the Foothill and Eastern Transportation Corridor toll roads. The 2012 Modified Project is also in proximity to Irvine Station, which provides existing AMTRAK and Metrolink rail service.</p> <p>Additionally, the 2012 Modified Project is proposing to locate housing near non-residential development and near existing major employment and activity centers, including the Irvine Business Complex and the Irvine Spectrum. By providing a wide range of housing opportunities near existing and proposed employment and activity centers, the 2012 Modified Project would promote fewer and shorter vehicle trips and thereby reduce the associated congestion and air quality impacts.</p> <p>Furthermore, implementation of the 2012 Modified Project would be consistent with an underlying goal of the 2011 Approved Project, namely to implement a master-planned community that offers a wide range of non-vehicular modes of transportation, including public transit and trails for pedestrians and bicyclists.</p>
RTP G6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking).	<p>Consistent: The CEQA process ensures that plans at all levels of government consider all environmental impacts of a proposed project. The various sections of this DSSEIR appropriately address the potential environmental impacts of the 2012 Modified Project and outline mitigation measures and PPPs to reduce and/or eliminate any impacts, as applicable and feasible. For example, Section 5.3, <i>Air Quality</i>, of this DSSEIR addresses air quality impacts, and Section 5.4, <i>Greenhouse Gas Emissions</i>, addresses global climate impacts of the 2012 Modified Project, as compared to the 2011 Approved Project. These sections outlined mitigation measures and PPPs from the 2011 Certified EIR and associated MMRP that apply to the 2012 Modified Project and that will reduce any air quality and global climate change impacts to the extent feasible.</p> <p>Additionally, the types of uses and configuration of uses contemplated by the 2012 Modified Project maximize the use of existing urbanized areas and increase alternatives to the single-occupant vehicle, both of which work to minimize emissions and congestion impacts.</p> <p>See also above response to RTP Goals G2-G4.</p>

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LAND USE AND PLANNING

Table 5.7-3
*Consistency with SCAG's 2012 Regional Transportation Plan/
Sustainable Communities Strategy Goals*

<i>RTP Goals</i>	<i>Modified Project Compliance</i>
RTP G7: Actively encourage and create incentives for energy efficiency, where possible.	Consistent: The 2012 Modified Project's impact on energy use is addressed in Sections 5.3, <i>Greenhouse Gas Emissions</i> , and 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR. See also above response to RCP Policy LU-6.2 in Table 5.7-2.
RTP G8: Encourage land use and growth patterns that facilitate transit and non-motorized transportation.	<p>Consistent: The land uses contemplated by the 2012 Modified Project would complement and improve the existing and proposed circulation and transportation facilities in and around the Proposed Project Site. For example, the residential and non-residential land uses would be located and designed in a manner that would facilitate usage of the existing and future vehicular and nonvehicular transportation systems.</p> <p>Additionally, the 2012 Modified Project involves the placement of new housing in close proximity to existing and future jobs, which would serve to reduce VMT for residents and employees in the vicinity. Furthermore, elements will be incorporated into the future design of the 2012 Modified Project to encourage the use of alternate modes of transportation, such as trail linkages, access to public transportation, and placing public services and retail services within walking distance of the residential community.</p> <p>See also above response to RTP Goals G2-G4.</p>
RTP G9: Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other agencies.	Not Applicable: This is not a project-specific goal and is therefore not applicable.

Source: 2012 SCAG Regional Transportation Plan

SCAG Compass Blueprint Consistency Analysis

Table 5.7-4 provides an assessment of the 2012 Modified Project's consistency with advisory SCAG Compass Blueprint principles. The analysis contained in Table 5.7-4 demonstrates that the 2012 Modified Project would be consistent with the advisory SCAG Compass Blueprint principles. Therefore, implementation of the 2012 Modified Project would not result in significant land use impacts related to the advisory SCAG policies, goals, and principals, as compared to the 2011 Approved Project.

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LAND USE AND PLANNING

Table 5.7-4

Consistency with Compass Blueprint 2% Strategy Area Principles

	Compass Blueprint Principles	Modified Project Compliance
Improve Mobility for All Residents		
GV P1.1	Encourage transportation investments and land use decisions that are mutually supportive.	<p>Consistent: The 2012 Modified Project's land uses would complement and improve the existing and proposed circulation and transportation facilities in and around the vicinity of the Proposed Project Site. For example, the land uses would be located and designed in a manner that would facilitate usage of the existing and future vehicular and nonvehicular transportation systems, including the proposed internal comprehensive trail and roadway system. Additionally, as a part of individual project developments, traffic and circulation improvements would be installed and/or funded as necessary to ensure that the area's roadways operate at acceptable levels of service.</p> <p>Furthermore, the 2012 Modified Project involves the placement of new housing in close proximity to existing and future jobs, which would serve to reduce VMT for residents and employees in the vicinity. Elements will also be incorporated into the future design of the 2012 Modified Project to encourage the use of alternate modes of transportation, such as trail linkages, access to public transportation, and placing public services and retail services within walking distance of the residential community (see Figures 5.12-32 and 5.12-33).</p> <p>See also above response to RTP Goals G1-G4 in Table 5.7-3.</p>
GV P1.2	Locate new housing near existing jobs and new jobs near existing housing.	<p>Consistent: The 2012 Modified Project allows for residential development near onsite non-residential development and is located near existing major employment and activity centers, including the Irvine Business Complex and the Irvine Spectrum. By providing a wide range of housing opportunities near existing and proposed employment and activity centers, the 2012 Modified Project locates new housing near existing and foreseeable jobs, and vice versa. Additionally, the proposed zoning for the proposed Combined PA 51 allows the development of a wide range of commercial, institutional, office, and other employment-oriented uses that would cater not only to the residents of the 2012 Modified Project, but also to existing and future residents in surrounding communities.</p>

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LAND USE AND PLANNING

Table 5.7-4

Consistency with Compass Blueprint 2% Strategy Area Principles

	<i>Compass Blueprint Principles</i>	<i>Modified Project Compliance</i>
GV P1.3	Encourage transit-oriented development.	<p>Consistent: See above responses to RCP Policies OSC-8 and OSC-9 in Table 5.7-2.</p> <p>Additionally, the proposed 8.1 Trails and Transit Oriented Development zoning designation will allow many of the uses that are currently permitted in Existing PAs 30 and 51 in zones 3.2 Transit Oriented Development, 4.3 Vehicle-Related Commercial, and 5.4B General Industrial, which include residential, commercial, and educational uses in proximity to enhanced transit and pedestrian activity, thereby promoting and supporting a synergistic live/learn/work/play environment. Allowing a mix of uses that are complementary to each other and in proximity to one another would help reduce the reliance on the automobile and increase the opportunities for the use of alternative modes of transportation, including biking and walking.</p>
GV P1.4	Promote a variety of travel choices.	<p>Consistent: See above responses to Principles GV P1.2 and P1.3.</p>
Foster Livability in All Communities		
GV P2.1	Promote infill development and redevelopment to revitalize existing communities.	<p>Consistent: The 2012 Modified Project is an infill development and is located in a highly urbanized area of Irvine and adjacent to urbanized areas of the City of Lake Forest. The 2012 Modified Project would implement a master-planned community on a former military base. Also see above response to RCP Policy OSC-10 in Table 5.7-2</p>
GV P2.2	Promote developments, which provide a mix of uses	<p>Consistent: The 2012 Modified Project would further the development of a master-planned community on a former military base with a mix of uses, including residential, commercial, research and development, recreational, open space, and office.</p>
GV P2.3	Promote “people scaled,” walkable communities.	<p>Consistent: See above responses to Principles GV P1.2 and P1.3.</p>
GV P2.4	Support the preservation of stable, single-family neighborhoods.	<p>Consistent: The 2012 Modified Project proposes development of a master-planned community with a mix of uses, including residential, on a site that was formerly a military base. The Proposed Project site does not currently consist of any residential neighborhoods.</p>
Enable Prosperity for All People		
GV P3.1	Provide, in each community, a variety of housing types to meet the housing needs of all income levels.	<p>Consistent: The 2012 Modified Project’s impacts on housing are discussed in Section 5.9, <i>Population and Housing</i>, of this DSSEIR.</p> <p>The 2012 Modified Project consists of 4,894 already approved dwelling units plus 4,606 additional dwelling units (3,412 base units and 1,194 DB units). The 2012 Modified Project also includes the option to convert up to 535,000 square feet of Multi-Use to up to 889 base dwelling units and 311 DB units, granted pursuant to State law. The 2012 Modified Project allows for an array of housing types and densities (low, medium and high), including single-family attached and detached</p>

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Table 5.7-4

Consistency with Compass Blueprint 2% Strategy Area Principles

	Compass Blueprint Principles	Modified Project Compliance
		and clustered homes, which would accommodate a broad range of income levels and lifestyles and respond to local and regional housing needs. The variation in residential unit types will help broaden the range of housing densities in a subregion that is largely developed with single-family homes.
GV P3.2	Support educational opportunities that promote balanced growth.	<p>Consistent: The residents of the 2012 Modified Project would be served by existing schools within IUSD or SVUSD. Additionally, the 2011 Approved Project included two K-8 school sites, each with a capacity of 1,000 students. The 2012 Modified Project also proposes a 2,600 student high school to be located on the Proposed Project Site. Residents of the 2012 Modified Project would be served by these new schools. Furthermore, the existing 6.1 Institutional zoning designation in Existing PA 51 would continue to exist in the proposed Combined PA 51 and would continue to allow the development of public and quasi-public facilities such as churches, schools (public and private) or utilities.</p> <p>Additionally, the 2012 Modified Project would not interfere with adopted plans that call for the development of regionally significant conservation and open space, parks and recreation, educational facilities, and other public-oriented land uses, which promote balanced growth.</p>
GV P3.3	Ensure environmental justice regardless of race, ethnicity or income class.	<p>Consistent: The 2012 Modified Project strives to mitigate environmental impacts and in doing so upholds environmental justice regardless of race, ethnicity, or income class. Additionally, the 2012 Modified Project would not result in impacts to surrounding communities considered socioeconomically disadvantaged, as none are present in the surrounding area.</p> <p>See also above response to Principle GV P3.1.</p>
GV P3.4	Support local and state fiscal policies that encourage balanced growth.	<p>Consistent: The 2012 Modified Project encourages balanced growth in the Proposed Project Site through the development of a mix of uses, including residential, commercial, institutional, recreational, open space, and office. Additionally, the 2012 Modified Project would further facilitate development under adopted plans that call for conservation and open space, parks and recreation, educational facilities, and other public-oriented land uses, integrated with privately developed multi-use, residential, and commercial properties in the proposed Combined PA 51.</p>
GV P3.5	Encourage civic engagement	<p>Consistent: The 2012 Modified Project promotes social and civic engagement through the development of a mix of uses interconnected with recreational opportunities and facilities, including the adjacent Orange County Great Park. Such integrated uses would foster community interaction and gathering.</p>

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Table 5.7-4

Consistency with Compass Blueprint 2% Strategy Area Principles

	Compass Blueprint Principles	Modified Project Compliance
Promote Sustainability for Future Generations		
GV P4.1	Preserve rural, agricultural, recreational, and environmentally sensitive areas.	Consistent: As discussed in the 2011 Certified EIR and in Section 5.11, <i>Recreation</i> , of this DSSEIR, the 2011 Approved Project includes approximately 1,475 acres, or 2.3 square miles, of open space and recreation uses. The total acreage includes areas that would be managed as wildlife and drainage corridors and/or for passive recreation, as well as areas that would be developed for active recreation. The Relocated Wildlife Corridor Feature, which will be adjacent to the Borrego Canyon Channel, will help to preserve environmentally sensitive areas. The 2012 Modified Project would not interfere with adopted plans that call for the development of regionally significant conservation, open space, parks and recreation areas. See also above response to RCP Policy WA-13 in Table 5.7-2.
GV P4.2	Focus development in urban centers and existing cities.	Consistent: The 2012 Modified Project is an infill master-planned community located in a highly urbanized area of Irvine and adjacent to urbanized areas of the City of Lake Forest.
GV P4.3	Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution and significantly reduce waste.	Consistent: The CEQA process ensures that plans at all levels of government consider all environmental impacts of a proposed project. Sections 5.3, <i>Air Quality</i> , 5.4, <i>Greenhouse Gas Emissions</i> , and 5.13, <i>Utilities and Service Systems</i> , of this DSSEIR address the potential environmental impacts of the 2012 Modified Project related to resource efficiency, pollution, and solid waste. As outlined in those DSSEIR sections, the 2012 Modified Project would adhere to state and federal environmental and climate change and pollution/waste reduction policies that seek to promote the efficient use of resources and the reduction of pollution and waste. See also above response to RCP Policy LU-6.2 in Table 5.7-2.
GV P4.4	Utilize “green” development techniques	Consistent: See above response to RCP Policy LU-6.2 in Table 5.7-2.

Source: SCAG Compass Blueprint

OC SCS Consistency Analysis

Table 5.7-5 provides an assessment of the 2012 Modified Project’s consistency with pertinent OC SCS sustainability strategies. The analysis contained in Table 5.7-5 demonstrates that the 2012 Modified Project would be consistent with the applicable sustainability strategies of the OC SCS. Therefore, implementation of the 2012 Modified Project would not result in significant land use impacts related to the OC SCS sustainability strategies, as compared to the 2011 Approved Project.

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LAND USE AND PLANNING

Table 5.7-5

Consistency with Orange County's Sustainability Communities Strategy

<i>OC SCS Sustainability Strategies</i>	<i>Modified Project Compliance</i>
Sustainability Strategy A: Support transit-oriented development.	Consistent: The existing and proposed areas zoned 8.1 Trails and Transit Oriented Development allow many of the uses that are currently permitted in Existing PAs 30 and 51 in zones 3.2 Transit Oriented Development, 4.3 Vehicle-Related Commercial, and 5.4B General Industrial, which include residential, commercial, and educational uses in proximity to enhanced transit and pedestrian activity, thereby promoting and supporting a synergistic live/learn/work/play environment. Allowing a mix of uses that are complementary to each other and in proximity to one another would help reduce the reliance on the automobile and increase the opportunities for the use of alternative modes of transportation, including biking and walking. Additionally, the 2012 Modified Project is in proximity to the Irvine Station, which provides existing AMTRAK and Metrolink rail service.
Sustainability Strategy B: Support infill housing development and redevelopment.	Consistent: The 2012 Modified Project is an infill project that is located in a highly urbanized area of Irvine and also adjacent to urbanized areas of the city of Lake Forest. The 2012 Modified Project entails the development of a master-planned community on and reuse of the former MCAS El Toro. The 2012 Modified Project consists of 4,894 already approved dwelling units plus 4,606 additional dwelling units (3,412 base units and 1,194 DB units). The 2012 Modified Project also includes the option to convert up to 535,000 square feet of Multi-Use to up to 889 base dwelling units and 311 DB units, granted pursuant to State law.
Sustainability Strategy C: Support mixed-use development and thereby improve walkability of communities.	Consistent: See above response to Sustainability Strategy A. Additionally, elements will be incorporated into the future design of the 2012 Modified Project to encourage the use of alternate modes of transportation, such as trail linkages, access to public transportation, and placing public services and retail services within walking distance of the residential community.
Sustainability Strategy D: Increase regional accessibility in order to reduce vehicle miles traveled.	Consistent: The 2012 Modified Project is located adjacent to I-5 and in proximity of the Foothill and Eastern Transportation Corridor toll roads. Additionally, the 2012 Modified Project is in proximity to the Irvine Station, which provides existing AMTRAK and Metrolink rail service. Furthermore, the 2012 Modified Project involves the placement of new housing in close proximity to existing and future employment and activity centers, including future development on-site, the Irvine Business Complex and the Irvine Spectrum. By allowing for a wide range of housing opportunities near existing and proposed employment and activity centers, the 2012 Modified Project would promote fewer and shorter vehicle trips and thereby reduce VMT.
Sustainability Strategy E: Improve jobs-to-housing ratio.	Consistent: The 2012 Modified Project allows for the development of an array of housing types and densities (low, medium and high), including single-family attached and detached and clustered homes, which would accommodate a broad range of income levels and lifestyles and respond to local and regional housing needs. Therefore, the 2012 Modified Project would help the City further meet its RHNA

5. Environmental Analysis

LAND USE AND PLANNING

Table 5.7-5

Consistency with Orange County's Sustainability Communities Strategy

OC SCS Sustainability Strategies	Modified Project Compliance
	<p>through 2025. In addition, the 2012 Modified Project's additional housing would help improve the City's jobs-to-housing balance.</p> <p>Jobs/housing balance and consistency with the City's Housing Element are further discussed in Section 5.9, <i>Population and Housing</i>, of this DSSEIR.</p>
Sustainability Strategy F: Promote land use patterns that encourage the use of alternatives to single-occupant automobile use.	<p>Consistent: See above responses to Sustainability Strategies A and D. Additionally, the types of uses and configuration of uses contemplated by the 2012 Modified Project maximize the use of existing urbanized areas and increase alternatives to the single-occupant vehicle.</p>
Sustainability Strategy G: Support retention and/or development of affordable housing.	<p>Consistent: The 2012 Modified Project consists of 4,894 already approved dwelling units plus 4,606 additional dwelling units (3,412 base units and 1,194 DB units). The 2012 Modified Project also includes the option to convert up to 535,000 square feet of Multi-Use to up to 889 base dwelling units and 311 DB units, granted pursuant to State law. The 2012 Modified Project allows for the development of an array of housing types and densities (low, medium and high), including single-family attached and detached and clustered homes, which would accommodate a broad range of income levels and lifestyles.</p> <p>The 2012 Modified Project's impact on housing is addressed in Section 5.9, <i>Population and Housing</i>, of this DSSEIR.</p>
Sustainability Strategy H: Support natural land restoration and conservation and/or protection offering significant carbon mitigation potential via both sequestration and avoidance of increased emissions due to land conversion.	<p>Consistent: The 2011 Approved Project incorporates the 974-acre NCCP Habitat Preserve into the 2011 Approved Project design. The Habitat Preserve has been conveyed to the Federal Aviation Administration, with the Department of the Interior managing the land as part of the NCCP/HCP.</p>
Sustainability Strategy I: Eliminate bottlenecks and reduce delay on freeways, toll roads, and arterials.	<p>Consistent: The 2012 Modified Project's land uses would complement and improve the existing and proposed circulation and transportation facilities in and around the Proposed Project Area. For example, as a part of individual project developments, all necessary traffic and circulation improvements would be installed and/or funded to ensure that the City's roadways function as intended. Internal roadway systems within the Proposed Project Site would also be coordinated with the existing and proposed land use and circulation patterns. Additionally, all 2012 Modified Project roadways would be designed in accordance with the City's adopted roadway design standards, which would be enforced by the City during its required development review process for individual development projects.</p> <p>The 2012 Modified Project's impacts on traffic and circulation are discussed in detail in Section 5.12, <i>Transportation and Traffic</i>, of this DSSEIR.</p>

5. Environmental Analysis

LAND USE AND PLANNING

Table 5.7-5

Consistency with Orange County's Sustainability Communities Strategy

OC SCS Sustainability Strategies	Modified Project Compliance
Sustainability Strategy J: Apply Transportation System Management and Complete Street practices to arterials and freeways to maximize efficiency.	Consistent: Future subdivision maps associated with the 2012 Modified Project will be reviewed for compliance with the Complete Streets Act (Assembly Bill 1358). Additionally, as outlined in Mitigation Measure TRAN 1, future non-residential development shall participate in an existing or future transportation management association to reduce traffic, air quality and noise impacts. See above responses to Sustainability Strategies A, D and I and below response to Sustainability Strategy O.
Sustainability Strategy K: Improve modes through enhanced service, frequency, convenience, and choices.	Consistent: See above responses to Sustainability Strategies A, D and I.
Sustainability Strategy L: Expand and enhance Transportation Demand Management practices to reduce barriers to alternative travel modes and attract commuters away from single occupant vehicle travel.	Consistent: See above response to Sustainability Strategy F.
Sustainability Strategy M: Continue existing, and explore expansion of, highway pricing strategies.	Not Applicable: This is not a project-specific goal and is therefore not applicable.
Sustainability Strategy N: Implement near-term (Transportation Improvement Program and Measure M2 Early Capital Action Plan) and long-term (LRTP 2035 Preferred Plan) transportation improvements to provide mobility choices and sustainable transportation options.	Consistent: See above responses to Sustainability Strategies A and D and J.
Sustainability Strategy O: Acknowledge current sustainability strategies practiced by Orange County jurisdictions and continue to implement strategies that will result in or support the reduction of GHG emissions.	Consistent: See above response to RCP Policy LU-6.2 in Table 5.7-2. Additionally, Section 5.4, <i>Greenhouse Gas Emissions</i> , of this DSSEIR addresses global climate impacts of the 2012 Modified Project. That section outlines mitigation measures and PPPs from the 2011 Certified EIR and associated MMRP that apply to the 2012 Modified Project and that will reduce air quality and global climate change impacts to the extent feasible. Furthermore, the types of uses and configuration of uses contemplated by the 2012 Modified Project maximize the use of existing urbanized areas and increase alternatives to the single-occupant vehicle, both of which work to minimize emissions impacts.

Source: Orange County Sustainable Communities Strategy

5.7.5 Cumulative Impacts

The current General Plan and zoning designations for the Proposed Project Site generally encourage a wide range of land uses including residential, open space, recreation, commercial, institutional, office, and other employment-oriented uses that would carry out the vision and goals of the 2011 Approved Project. The 2012 Modified Project evaluated in this DSSEIR would help maintain consistency with the 2011 Approved Project's overall goals and would help fulfill the goals, objectives, and policies of the General Plan and the City's vision for the future of the overall Great Park. The 2012 Modified Project would also further previous City actions concerning the Great Park site by developing certain elements and portions of the Proposed Project Site. Additionally, the 2012 Modified Project consists of 4,894 already approved dwelling units plus 4,606 additional dwelling units (3,412 base units and 1,194 DB units). The 2012 Modified Project also includes the option to convert up to 535,000 square feet of Multi-Use to up to 889 base residential units and 311 DB units, granted pursuant to State law. Therefore, the

5. Environmental Analysis

LAND USE AND PLANNING

2012 Modified Project would carry forward the adopted policies and objectives of the City's General Plan related to helping the City further meet its RHNA through 2025 and implementing the provisions of the ARDA regarding the residential component of the 2011 Approved Project.

Intensification of various land uses under the 2012 Modified Project, in conjunction with other cumulative development in accordance with the City's General Plan buildout, could cause citywide land use and planning impacts. However, upon approval of the 2012 Modified Project's General Plan Amendment and Zone Change, development under the 2012 Modified Project would be consistent with applicable plans, programs, policies, and regulations of the General Plan and Zoning Ordinance, SCAG's RCP, RTP, and Compass Growth Vision, and the HCP/NCCP, as provided in detail above. The 2012 Modified Project allows for a host of jobs, restaurants, retail, entertainment, and other support services and uses would be within walking and biking distance of many of the existing and future 2012 Modified Project residential uses, as well as urban areas located immediately adjacent to the Proposed Project Site. Therefore, the 2012 Modified Project would create a cohesive community of residential and other support uses, in turn contributing to the development of a sustainable urban neighborhood. Furthermore, future individual development projects on the Proposed Project Site would be subject to compliance with the local and regional plans, programs and policies reviewed in this section, in order to ensure orderly urban development. Therefore, implementation of cumulative development in accordance with the City's General Plan would not combine with the 2012 Modified Project to result in cumulatively considerable land use impacts, as compared to the 2011 Approved Project.

5.7.6 Applicable Mitigation Measures from the 2011 Certified EIR

No mitigation measures were outlined in the 2011 Certified EIR because land use impacts of the 2011 Approved Project were considered less than significant without mitigation.

5.7.7 Level of Significance Before Additional Mitigation

Upon implementation of existing regulatory requirements, the following land use impacts would be less than significant: Impact 5.7-1. As was the case for the 2011 Approved Project, all 2012 Modified Project impacts on land use and planning would be less than significant before mitigation.

5.7.8 Additional Mitigation Measures for the 2012 Modified Project

Because land use impacts of the 2012 Modified Project are less than significant without mitigation, no additional mitigation measures are required.

5.7.9 Level of Significance After Mitigation

No significant impacts relating to land use and planning have been identified. All 2012 Modified Project impacts related to land use would be less than significant without mitigation.

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5.6 HYDROLOGY AND WATER QUALITY

This section compares the 2012 Modified Project's potential impacts on hydrology and water quality to those of the 2011 Approved Project. The analysis in this section is based, in part, upon the following technical studies:

- *Hydrology Study Heritage Fields Project 2012 - General Plan Amendment and Zone Change*, RBF Consulting, June 15, 2012.
- *Project Water Quality Technical Report – Great Park Neighborhoods TTOD*, ENGEO Incorporated, June 22, 2012.

These studies are included in their entirety in Appendices G and H of this DSSEIR. In addition, the following previously prepared technical studies were used in this analysis and are available for review at the City of Irvine, Community Development Department:

- *Compliance Report for PA 51 and 30 Watershed Updated Marshburn Channel, Bee Canyon Channel, Agua Chinon Channel, and Borrego Canyon Channel*, RBF Consulting, March 2011.
- *Conceptual Project Water Quality Management Plan (WQMP), Updating the Integrated Master Plan of Drainage, Water Quality and Habitat Mitigation, Orange County Great Park Neighborhoods*. RBF Consulting, April 20, 2009, updated August 11, 2011.

5.6.1 Hydrology

5.6.1.1 Environmental Setting

The Proposed Project Site lies within the San Diego Creek watershed, which is 105 square miles and encompasses portions of the Cities of Irvine, Tustin, Santa Ana, Costa Mesa, Lake Forest, Laguna Hills, Orange, and Newport Beach, as well as unincorporated Orange County. The watershed includes the San Diego Creek along with Peters Canyon channel and their tributaries.

In September 2011, Heritage Fields El Toro, LLC ("Heritage Fields") and the City of Irvine (the "City") completed a document entitled "*Amendment to [Existing] PA 51 and PA 30 Watershed Update*" approved by the Orange County Public Works Department. The watersheds analyzed in the Watershed Update included: Marshburn Channel (F16), Bee Canyon Channel (F17), Agua Chinon Channel (F18) and Borrego Canyon Channel (F20). The purpose of this document was to show that the proposed drainage for the 2011 Approved Project were in compliance with the discharge amounts established by the previously approved Master Plans.

As was true for the 2011 Approved Project, the Orange County Hydrology Manual, dated 1986, governs the procedure used to analyze surface water conveyance for the 2012 Modified Project.

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5.6.1.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City of Irvine has determined that a project would normally have a significant effect on the environment if the project would:

- HYD-4 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- HYD-5 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- HYD-7 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- HYD-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- HYD-9 Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- HYD-10 Be subject to inundation by seiche, tsunami, or mudflow.

Chapter 8, *Impacts Found Not to Be Significant*, substantiates the City's determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR) that the following potential impacts would be less than significant:

- Potential Impacts HYD-2, HYD-9 and HYD-10

Those impacts will not be addressed in the following analysis. For analysis of the 2012 Modified Project with respect to Potential Impacts HYD-1, HYD-3, HYD-5, and HYD-6, see Subsection 5.6.2, *Water Quality*, below.

5.6.1.3 The 2011 Approved Project

The 2011 Approved Project includes all of the mitigation measures from the 2011 Certified EIR and associated MMRP, and all of the analyses, studies and reports prepared to implement those mitigation measures.

Mitigation Measure H/WQ3 from the 2011 Certified EIR and associated MMRP requires that, prior to approval of the first tentative tract or parcel map for Existing Planning Areas 30 and 51, detailed hydrologic and hydraulic analyses be conducted in accordance with Orange County Flood Control District ("OCFCD") methodologies and standards and the Flood Control Master Plan for San Diego Creek, as well as any additional guidelines in effect at the time of project design. To comply with that mitigation measure, the following updates to the Flood Control Master Plan for San Diego Creek (collectively, "Master Plans") were amended and approved in July 2011.

- *Amendment to the San Diego Creek Master Plan- Planning Area 51/30 for Bee Canyon, Agua Chinon, Borrego, Serrano and Upper San Diego Creek, RBF Consulting, July 2011.*

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HYDROLOGY AND WATER QUALITY

- *Amendment to Planning Area 51 Marshburn Watershed Update, RBF Consulting, July 2011.*

These Master Plans were prepared in accordance with the Orange County methodologies and standards, and the Peak Flow rates at Hydrologic Nodes along the existing downstream regional facilities and San Diego Creek were compared to the values established by the Flood Control Master Plan for San Diego Creek. Orange County approved the methodology and accepted Peak Runoff rates established by the Master Plans. As part of Orange County's approval, the City completed a review of the Master Plans and found the Master Plans to be consistent with the requirements of the 2011 Certified EIR. Copies of these Master Plans are on file with the City and available for inspection at the Irvine Public Works Department, located at the City of Irvine Civic Center during normal business hours.

The Master Plans identified the Tributary Runoff Area for each drainage channel system. In addition, the Master Plans identified the Average Land Use, drainage patterns and backbone storm drain system for the 2011 Approved Project. By using the Average Land Use (created by the zoning designations for the Proposed Project Site) and drainage patterns, Peak Flow Rates were identified at specific downstream locations, referred to as Hydrologic Nodes. The Master Plans establish Peak Flow rates at these Hydrologic Nodes and compare those values to the flow rates that were used as the basis of the design for the existing regional drainage facilities. Peak Flow rates at these locations were acceptable to the OCFCD and the City and were approved as part of the Master Plans. The additional backbone storm drain facilities included in the Master Plans confirmed that development of the 2011 Approved Project would have a less than significant impact on hydrology.

5.6.1.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies ("PPPs") that apply to both the 2011 Approved Project and the 2012 Modified Project and will help to reduce and avoid potential impacts related to hydrology.

- PPP 6-1 Prior to the issuance of a precise grading permit, the applicant shall submit a hydrology and hydraulic analysis of the site. The analysis shall be prepared by a professional civil engineer versed in flood control analysis and shall include the following information and analysis (Standard Condition A.6):
- a. Hydrology/hydraulic analysis of 100-year surface water elevation at the project site to determine building elevation or flood proofing elevation.
 - b. Analysis of existing and post-development peak 100-year storm flow rates, including mitigation measures to reduce peak flows to existing conditions.
 - c. An analysis demonstrating that the volume of water ponded on the site and stored underground in the drainage system outside of the building envelope in the proposed condition is greater than or equal to the corresponding volume in the existing condition. The water surface used to determine the ponded volume shall be based on the water surface in the major flood control facility that the site is tributary to.

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Project Design Features

There are no project design features related to hydrology that apply to the 2012 Modified Project.

The following impact analysis addresses impacts that the City determined in the Initial Study could be potentially significant impacts of the 2012 Modified Project. The applicable potential impacts are identified in brackets after the impact statement.

Methodology

There are two methods of hydrologic calculations that were used to determine the design discharges in the regional facilities at the Hydrologic Nodes for all Master Plan modeling. Generally, the "rational" method is used to calculate the design discharge for the local drainage areas when the tributary watershed area is less than one square mile (640 acres), whereas the unit hydrograph method is used when the tributary watershed area is in excess of 640 acres. However, all watersheds being studied for the 2012 Modified Project, including Hydrologic Nodes CP 3B, CP 4B, and 421, have drainage areas larger than 640 acres; therefore, the unit hydrograph method was used. Flow rate values to be compared were derived using unit hydrographs in accordance with the current Orange County Hydrology Manual, dated October, 1986. Hydrologic calculations were done using the 2004 Advanced Engineering Software (AES).

2012 Modified Project Conditions

Like the 2011 Approved Project, the 2012 Modified Project includes all of the mitigation measures from the 2011 Certified EIR and associated MMRP, and all of the analyses, studies and reports prepared to implement those mitigation measures.

The 2012 Modified Project proposes modifications to the 2011 Approved Project's land use plan, and Area weighted percent pervious ("Ap"). The effects of these proposed changes were analyzed in the following report, a copy of which is included in Appendix G to this DSSEIR:

- *Hydrology Study Heritage Fields Project 2012 - General Plan Amendment and Zone Change*, RBF Consulting, June 15, 2012.

As more fully described in Chapter 3, *Project Description*, the 2012 Modified Project proposes to change certain non-residential land uses to residential land uses primarily within Districts 5 and 6 (tributary to Agua Chinon and Borrego Channel). The areas that are south of the Railway (Districts 2 and 3) are consistent with the land use intensities in the Master Plan for the 2011 Approved Project. At this time, site planning and tentative maps are not being processed for the 2012 Modified Project. Therefore; the watershed boundaries and drainage patterns are effectively the same as for the 2011 Approved Project.

The Master Plans of Drainage define the drainage control components for the Approved Project Site, which includes the Proposed Project Site. The Master Plans' on-site channels will continue to drain the Combined PA 51 area for the 2011 Modified Project in the same manner as shown in the Master Plans for the 2011 Approved Project. The Master Plans already incorporate the backbone storm drain facilities needed to accommodate the changes in surface runoff caused by development of the 2012 Modified Project.

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Watershed Boundary Update

Tributary areas to Agua Chinon Channel, Borrego Canyon Channel, Serrano Creek Channel and Upper San Diego Creek are still consistent with the Master Plan for the 2011 Approved Project. The watershed boundaries from the 2011 Approved Project were used for this analysis.

Conveyance Update

Tentative map level hydrology maps for Districts 2, 3, 5 and 6 are not being processed as part of the 2012 Modified Project and therefore an update to this study is not required at this time. The proposed drainage patterns are still consistent when compared with the Master Plan for the 2011 Approved Project. The drainage patterns from the 2011 Approved Project were, therefore, used for this analysis.

Land Use

Land uses for the 2012 Modified Project were adjusted from what was reflected in the Master Plan (see Figure 5.6-1, *2011 Approved Master Plan Land Use Plan*). For this analysis, subareas from the detailed hydrology in the Master Plan were assigned a land use based on the 2012 Modified Project. From this land use an average pervious area (Ap) was used for each of the subareas (See Figure 5.6-2, *Hydrology Land Use*). This generalized breakdown allows for a land use representation that is more suitable for a regional hydrology analysis, while still accurately reflecting the 2012 Modified Project.

Results and Summary

Since the drainage patterns and watershed boundaries of Agua Chinon Channel, Borrego Canyon Channel, Serrano Creek Channel and Upper San Diego Creek watersheds for the 2011 Approved Project are not changed by the 2012 Modified Project, the only changes to hydrology relate to the land uses within a few of the subareas within the Proposed Project Site. Additionally, the Relocated Wildlife Corridor Feature would stay within the same watershed boundary. For these reasons, only the subareas of those Watersheds that were modified were analyzed. The results of the revised Unit Hydrograph Analysis for each node have been summarized below in Table 5.6-1 for the 2012 Modified Project. The updated peak discharge amounts for all watersheds are consistent with or slightly above values established in the Master Plan for the 2011 Approved Project. The slight increases at Node 421 and CP 4B are each less than 1.0 percent of the overall peak discharge amount. Future site planning and subsequent hydrology reports will refine those discharge amounts.

*Table 5.6-1
2012 Modified Project Hydrologic Node Summary*

<i>Node</i>	<i>Tributary Watershed</i>	<i>Tributary Area (Ac)</i>	<i>Average Ap</i>		<i>Peak Flow Rate, Q (cfs)</i>		
		<i>Master Plan</i>	<i>Master Plan</i>	<i>Revised</i>	<i>Master Plan</i>	<i>Revised</i>	<i>Delta</i>
CP 3B	Agua Chinon Channel	2,969	0.770	0.608	2,194	2,184	-10
421	Agua/Borrego Confluence	7,049	0.732	0.694	6,477	6,506	+29
CP 4B	Borrego Channel	4,025	0.716	0.694	4,521	4,559	+38

Hydrology Study Heritage Fields Project 2012 - General Plan Amendment and Zone Change, RBF Consulting, June 15, 2012.

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Agua Chinon Channel

Although the change in land use proposed by the 2012 Modified Project resulted in a change to the pervious area (imperviousness), when compared to the entire watershed, the peak discharge amount is consistent with the values from the Master Plan for the 2011 Approved Project. This is due to the fact that the initial area and the majority of the watershed lie much further upstream of the proposed Combined PA 51 development area, which allows the 2012 Modified Project to drain prior to the peak event arriving.

Borrego Canyon Channel

Similar to Agua Chinon watershed, the change in land use proposed by the 2012 Modified Project tributary to Borrego Canyon Channel resulted in a change to the pervious area (imperviousness), but when compared to the entire watershed, the peak discharge amount is slightly above the values from the Master Plan for the 2011 Approved Project. The slight increases of discharge amounts at Hydrologic Nodes CP 4B (0.8 percent increase) and 421 (0.4 percent increase) are consistent with the Master Plan for the 2011 Approved Project. Future site planning and subsequent hydrology reports for this tributary area will refine those discharge amounts.

The Relocated Wildlife Corridor Feature was analyzed within this tributary area for the 2012 Modified Project. The drainage characteristics remain the same as for the 2011 Approved Project, since the Relocated Wildlife Corridor Feature would remain within the Borrego Canyon Channel watershed.

Serrano Creek Channel

The 2012 Modified Project for this tributary area is consistent with the land use, watershed boundary and controlling flow paths in the Master Plan for the 2011 Approved Project. Therefore, there are no changes to discharge amounts at hydrologic nodes.

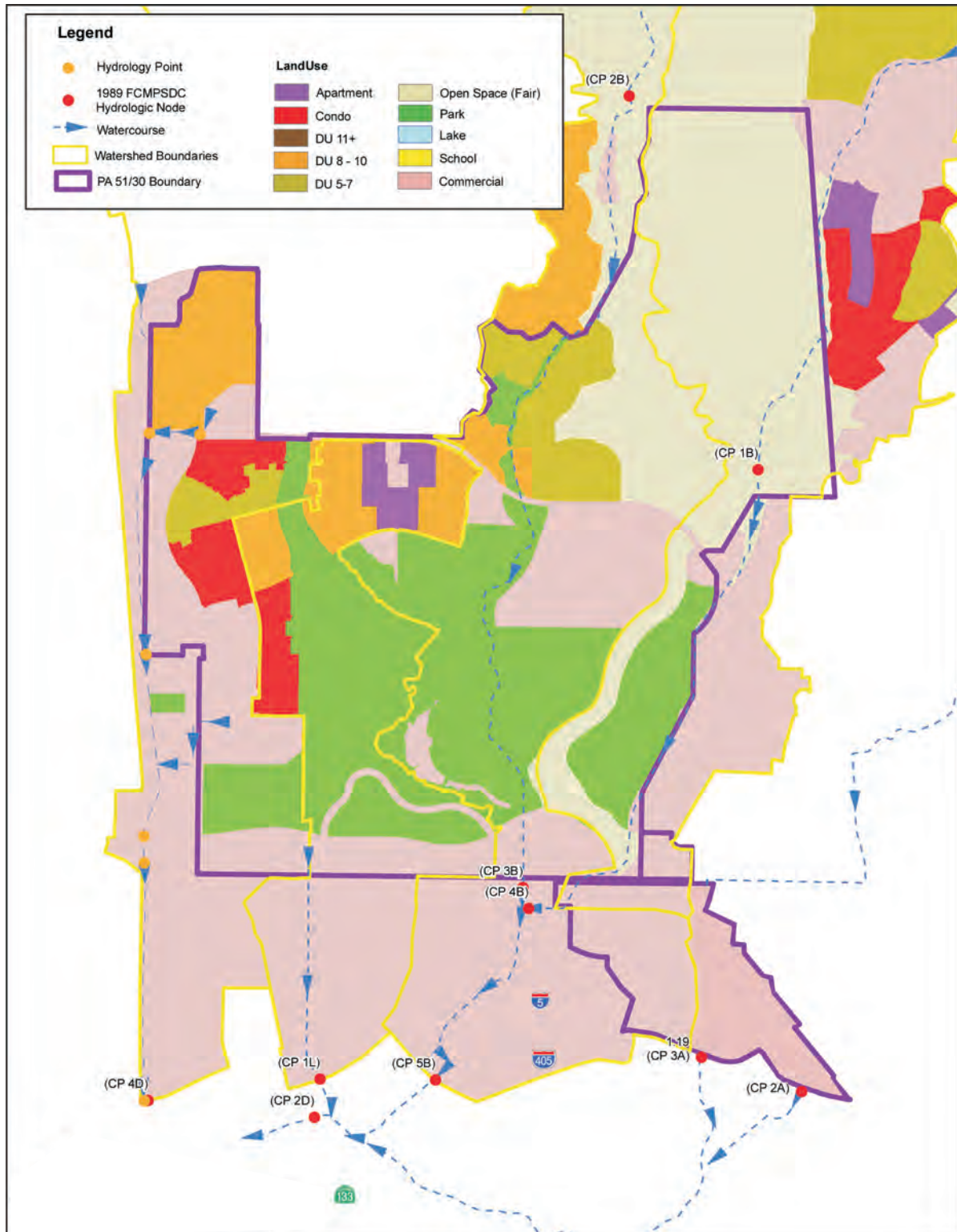
Upper San Diego Creek

Similar to the Serrano Creek Channel, the 2012 Modified Project for the Upper San Diego Creek tributary area is consistent with the land use, watershed boundary and controlling flow paths in the Master Plan for the 2011 Approved Project. Therefore, there are no changes to discharge amounts at the appropriate hydrologic nodes.

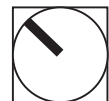
IMPACT 5.6.1-1: THE 2012 MODIFIED PROJECT WOULD NOT SUBSTANTIALLY INCREASE SURFACE WATER FLOWS INTO DRAINAGE SYSTEMS AS COMPARED TO THE 2011 APPROVED PROJECT. [IMPACTS HYD-4 AND HYD-5]

Impact Analysis: As discussed above, during operations, the 2012 Modified Project will not substantially increase surface water flows into drainage systems as compared to the 2011 Approved Project. Therefore, like the 2011 Approved Project, the 2012 Modified Project would result in a less than significant impact.

2011 Approved Master Plan Land Use Plan



0 5,000
Scale (Feet)



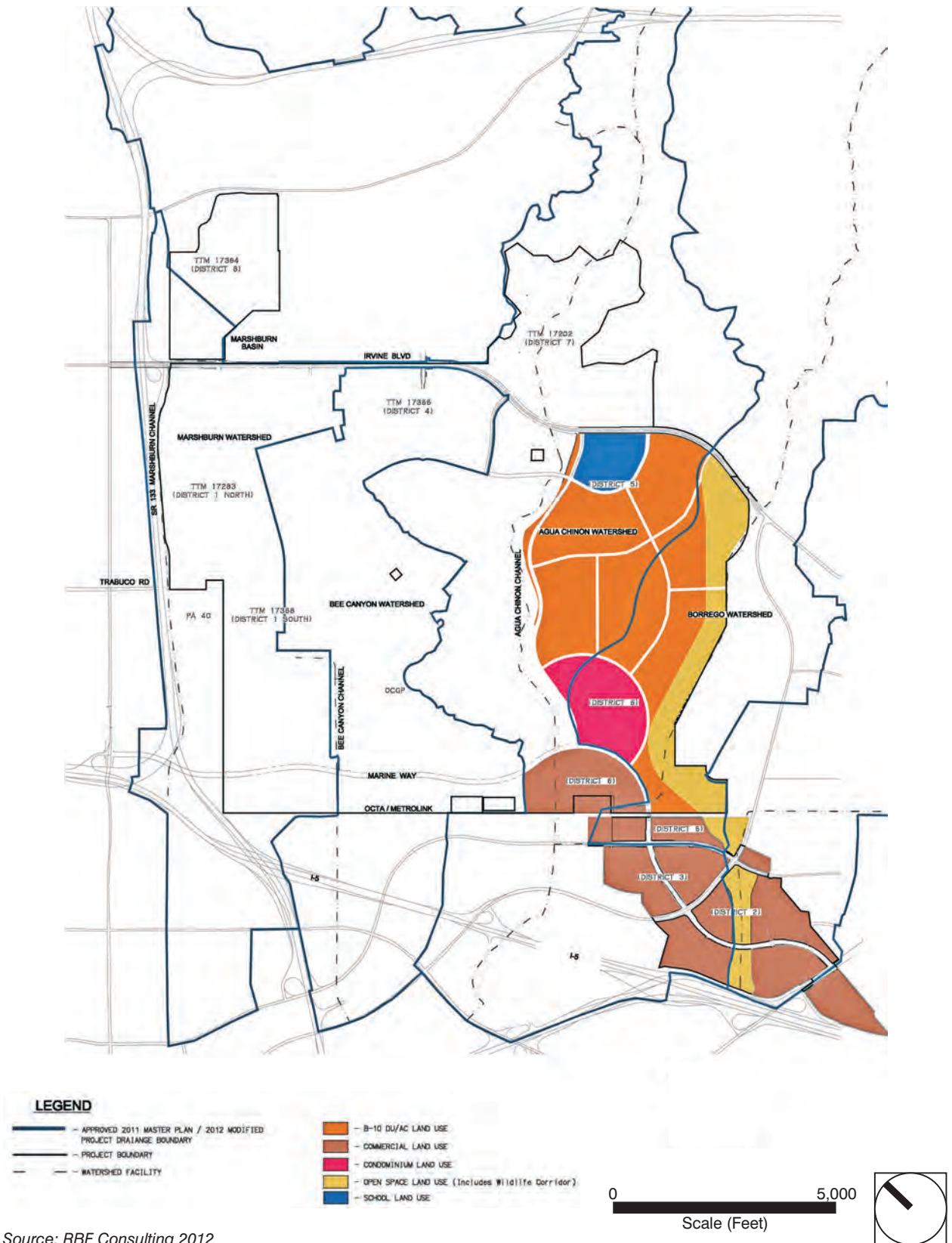
Source: RBF Consulting 2011

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.6-1**

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Proposed Hydrology Land Use



5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

IMPACT 5.6.1-2: THE 2012 MODIFIED PROJECT WOULD NOT LOCATE ADDITIONAL DEVELOPMENT AREAS WITHIN A 100-YEAR FLOOD HAZARD AREA. [IMPACTS HYD-7 AND HYD-8]

Impact Analysis: Current City development standards and the Zoning Code prohibit the construction of any structure within a 100-year Flood Hazard Area. Per the Zoning Code and Mitigation Measure H/WQ-4, which is incorporated into both the 2011 Approved Project and the 2012 Modified Project, a Letter of Map Revision (“LOMR”) must be completed prior to building any structure within an area mapped on the Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The LOMR must be filed upon the completion of the design of the flood control improvements required to contain or redirect the 100 year flood hazard. The LOMR process will be completed upon the completion of Record Drawings for the flood control facility. As a result, like the 2011 Approved Project, the 2012 Modified Project will result in a less than significant impact.

Mitigation Program and Net Impact

The 2012 Modified Project would result in minor changes to the 2011 Approved Project's drainage patterns and peak flows with minor alterations in impervious surfaces, but in general, the drainage areas, discharge points, and peak flow discharges will be consistent with the 2011 Approved Project. As was true for the 2011 Approved Project, any drainage improvements constructed as part of the 2012 Modified Project would be subject to the design criteria and capacities required by the City and Orange County. No additional mitigation measures are introduced in this DSSEIR as hydrology impacts would be less than significant with the mitigation measures identified in the 2011 Certified EIR and associated MMRP.

5.6.1.5 Cumulative Impacts

The geographic area for addressing cumulative hydrology impacts is the drainage area for the Proposed Project Site. Like the 2011 Approved Project, the 2012 Modified Project includes PPPs that assure there will be no off-site drainage impacts.

The area surrounding the Proposed Project Site is either developed, approved for development or planned for development. However, all related new development and redevelopment projects in Irvine and surrounding cities will be subject to the City's and the County of Orange's hydrology-related requirements, as are the 2011 Approved Project and the 2012 Modified Project. Therefore, all such projects would have to submit a hydrology report that would identify Peak Flow rates and drainage improvements that will be used to control runoff. Additionally, cumulative flows would be evaluated and addressed in terms of required Flood Control Master Plans for each cumulative project, which are specifically intended and designed to define the flood control system necessary to accommodate runoff from future area-wide development. As such, like the 2011 Approved Project, the 2012 Modified Project's cumulative impacts related to hydrology would be less than significant.

5.6.1.6 Applicable Mitigation Measures from the 2011 Certified EIR

The 2011 Certified EIR and associated MMRP identified two mitigation measures to reduce the effects on hydrology to a less than significant level. Both of these mitigation measures are incorporated into both the 2011 Approved Project and the 2012 Modified Project.

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H/WQ3 Prior to approval of the first tentative tract or parcel map in the project area, detailed hydrologic and hydraulic analysis shall be conducted. Studies and analysis shall be prepared in accordance with OCFCD methodologies and standards and the Flood Control Master Plan for San Diego Creek, as well as any additional guidelines in effect at the time of project design. Recommendations contained in the hydrology studies and/or hydraulic analysis to address drainage/flooding issues related to proposed development shall be implemented. Compliance with this measure shall be verified by the Community Development Department.

H/WQ4 Prior to issuance of a building permit for any unit within the 100-year floodplain, developers with property located in the newly delineated 100-year floodplain shall be required to construct such improvements as necessary to remove the property from the 100-year floodplain. Additionally, the developer shall prepare a Letter of Map Revision (LOMR) request to have the FIRMs revised to remove the development areas from the 100-year floodplain upon completion of the approved flood control facilities. The LOMR request shall be filed upon completion of design of the flood control improvements to contain or redirect the 100-year flood flows away from the property.

After the improvements are constructed, Record Drawings and a maintenance agreement with, or letter from, a public agency shall be submitted to FEMA to complete the LOMR process.

5.6.1.7 Level of Significance Before Additional Mitigation

Upon implementation of regulatory requirements, the standard conditions of approval, and the 2011 Approved Project's mitigation measures, which are incorporated into the 2012 Modified Project, Impacts 5.6.1-1 and 5.6.1-2 would be less than significant.

5.6.1.8 Additional Mitigation for the 2012 Modified Project

No additional mitigation measures are required, as the 2012 Modified Project would result in less than significant impacts on hydrology without additional mitigation.

5.6.1.9 Level of Significance After Additional Mitigation

All of the 2012 Modified Project's impacts on hydrology would be less than significant upon implementation of regulatory requirements, the standard conditions of approval, and the mitigation measures already in place under the 2011 Approved Project.

5.6.2 Water Quality

5.6.2.1 Environmental Setting

Regulatory Setting

Clean Water Act

The federal Water Pollution Control Act (also known as the Clean Water Act ["CWA"], 33 U.S.C. 1251 et seq.) is the principal federal statute that governs water quality. The CWA establishes the basic structure for the regulation of discharges of pollutants into the waters of the United States and gives the U.S.

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

Environmental Protection Agency (“EPA”) the authority to implement pollution control programs, such as setting wastewater standards for industry. The statute’s goal is to end all polluted discharges entirely and to restore, maintain, and preserve the integrity of the nation’s waters. The CWA regulates both the direct and indirect discharge of pollutants into the nation’s waters. Under the CWA, water quality standards for contaminants in surface waters are set, and the CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and storm water discharges, requires states to establish site-specific water quality standards for navigable bodies of water, and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA also funded the construction of sewage treatment plants and recognized the need for planning to address non-point sources of pollution. Section 402 of the CWA requires a permit for all point source (a discernible, confined, and discrete conveyance, such as a pipe, ditch, or channel) discharges of any pollutant (except dredge or fill material) into waters of the U.S.

Section 303(d) of the CWA requires that states identify waters that do not or that are not expected to meet water quality standards (beneficial uses, water quality objectives, and the anti-degradation policy) with the implementation of technology-based controls, even after point sources of pollution have installed the minimum required levels of pollution control technology.

Once a water body has been placed on the Section 303(d) list of impaired waters, states are required to develop a Total Maximum Daily Load (“TMDL”) to address each pollutant causing impairment. A TMDL defines how much of a pollutant a water body can tolerate and still meet water quality standards. Each TMDL must account for all sources of the pollutant, including: discharges from wastewater treatment facilities; runoff from homes, forested lands, agriculture, and streets or highways; contaminated soils/sediments, legacy contaminants such as DDT and PCBs on-site disposal systems (septic systems) and deposits from the air. Federal regulations require that the TMDL, at a minimum, account for contributions from point sources (permitted discharges) and contributions from nonpoint sources, including natural background. In addition to accounting for past and current activities, TMDLs may consider projected growth that could increase pollutant levels. TMDLs allocate allowable pollutant loads for each source, and identify management measures that, when implemented, will assure that water quality standards are attained.

National Pollutant Discharge Elimination System

Runoff water quality is regulated by the federal National Pollution Discharge Elimination System (“NPDES”) program established by the Clean Water Act of 1972. The NPDES program’s objective is to control and reduce pollutants to water bodies from non-point discharges. The program is administered by Regional Water Quality Control Boards (“RWQCBs”) throughout the State. The RWQCB issues NPDES point source permits for discharges from major industries and non-point source permits for discharges for municipalities and other non-agricultural dischargers.

Under the NPDES program, facilities that discharge pollutants from any point source into waters of the U.S. are required to obtain an NPDES permit. The term “pollutant” broadly includes any type of industrial, municipal, and agricultural waste discharged into water. Point sources are generally defined as discharges from publicly owned treatment works (“POTWs”), discharges from industrial facilities, and discharges associated with urban runoff. While the NPDES program addresses certain specific types of agricultural activities, the majority of agricultural facilities are defined as non-point sources and are exempt from NPDES regulation. Pollutant contributors come from direct and indirect

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sources. Direct sources discharge wastewater directly to receiving waters, whereas indirect sources discharge wastewater to POTWs, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only to direct point source discharges. The National Pretreatment Program addresses industrial and commercial indirect dischargers. Municipal sources are POTWs that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, the Municipal Sewage Sludge Program, Combined Sewer Overflows (“CSOs”), and the Municipal Storm Water Program. Non-municipal sources include industrial and commercial facilities.

Specific NPDES program areas applicable to these industrial/commercial sources are: Process Wastewater Discharges, Non-Process Wastewater Discharges, and the Industrial Storm Water Program. NPDES issues two basic permit types: individual and general. Also, the USEPA has recently focused on integrating the NPDES program further into watershed planning and permitting.

The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 50,000 or more, as well construction sites one acre or more in size, must file for and obtain an NPDES permit. Another measure for minimizing and reducing pollutant discharges to a publicly owned conveyance or system of conveyances (including roadways, catch basins, curbs, gutters, ditches, man-made channels and storm drains, designed or used for collecting and conveying stormwater) is the EPA’s Storm Water Phase II Final Rule. The Phase II Final Rule requires an operator (such as a city) of a regulated small municipal separate storm sewer system (“MS4”) to develop, implement, and enforce a program (e.g., Best Management Practices [‘BMPs’], ordinances, or other regulatory mechanisms) to reduce pollutants in post-construction runoff to the city’s storm drain system from new development and redevelopment projects that result in land disturbances of greater than or equal to one acre. The City of Irvine Community Development Department is the local enforcing agency of the MS4 NPDES permit relevant to the Proposed Project Site.

The provisions of the MS4 Permit require the installation of post-construction BMPs for new development as part of the federal NPDES program and have set standards for their implementation. These standards have been updated most recently in Order No. R8-2009-0030 NPDES No. CAS618030 as amended by Order No. R8-2010-0062 from the State of California, California Regional Water Quality Control Board, Santa Ana Region. The provisions of this order were implemented in July 2011.

The intent of these regulations is to rigorously regulate the quality and quantity of post-construction stormwater runoff from any new impervious surface over 10,000 square feet so that receiving waters downstream are not adversely impacted. To comply with these requirements, new developments are required to install water quality stormwater runoff BMPs that filter or treat rainfall runoff generated from storm events up to approximately the 85th percentile rainfall event (or approximately the 1-inch storm event) before discharging into a receiving waters such as the San Diego Creek. Additional hydrograph modification BMPs are also required so that post-project runoff does not exceed pre-project rates or durations if such an increase could contribute to erosion in receiving waters downstream from the Proposed Project Site.

The Orange County Stormwater Program issued a Drainage Area Management Plan (“DAMP”) in July 2003, pursuant to NPDES regulations. The 2003 DAMP requires a project’s engineer to prepare a Water Quality Management Plan that specifies how the project will use BMPs to meet the aforementioned waste discharge requirements.

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Although the 2012 Modified Project would not discharge directly into an impaired water body, runoff from the Proposed Project Site is tributary to Reach 2 of the San Diego Creek, which is listed on the current 2010 Section 303(d) List as impaired for metals and has established TMDL requirements for metals, nutrients, siltation and unknown toxicity (Tables 5.6-2 and 5.6-3). Reach 1 of San Diego Creek is also 303(d) listed as impaired for fecal coliform, selenium and Toxaphene, and has established TMDL requirements for metals, nutrients, pesticides and siltation (Tables 5.6-2 and 5.6-3).

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (California Water Code section 13000 et seq.) is the basic water quality control law for California. Under this Act, the State Water Resources Control Board (“SWRCB”) has ultimate control over State water rights and water quality policy. In California, the USEPA has delegated authority to issue NPDES permits to the SWRCB. The State is divided into nine regions related to water quality and quantity characteristics. The SWRCB, through its nine RWQCBs, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region’s ground and surface water, and local water quality conditions and problems. The basin plans must include an implementation plan that describes what methods and practices will be used to meet the water quality standards established in the basin plan. TMDLs, with their associated implementation plans, are adopted into the basin plans through the basin planning process.

Santa Ana River Basin Plan

The City of Irvine is located in the Santa Ana River Basin, Region 8, in the Upper Santa Ana Watershed. The Water Quality Control Plan for the Santa Ana River Basin (“Basin Plan”) includes the San Diego Creek watershed as well as Newport Bay, which are located downstream of the Proposed Project Site. According to the Basin Plan, beneficial uses for the San Diego Creek Drainage include water recreation, warm freshwater habitat, wildlife habitat and intermittent groundwater recharge.

Several pollutants of concern have been identified in the Basin Plan for San Diego Creek watershed and Newport Bay. Total TMDLs have been established for several of these pollutants including fecal coliform, metals, sediment, diazinon, organochlorine compounds and nutrients.

Table 5.6-2 lists the Proposed Project Site’s receiving water bodies (EPA 303d and Santa Ana RWQCB) and those bodies’ impairments as of 2010, while Table 5.6-3 presents the status of the TMDL for the Site’s receiving waters as of 2012.

Storm Water Pollution Prevention Plans

Pursuant to the CWA, on September 2, 2009, the SWRCB issued a statewide general NPDES Permit (Order No. 2009-0009 DWQ) for storm water discharges from construction sites (NPDES No. CAS000002) that became fully effective on July 1, 2010 (“Construction General Permit”). Under that Construction General Permit, discharges of storm water from construction sites with a disturbed area of one or more acres, or if part of a larger development, are required to either obtain individual NPDES permits for construction storm water discharges or be covered by the Construction General Permit. Coverage by the Construction General Permit is accomplished by completing and filing a Notice of Intent

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("NOI") with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan ("SWPPP").

Each applicant under the Construction General Permit must ensure that a SWPPP is prepared and a Waste Discharge Identification ("WDID") Number is issued prior to grading, and that the SWPPP is implemented during construction. Under Order No. 2009-0009 DWQ, the SWPPP must be developed by a Qualified SWPPP Developer ("QSD") and implemented by a Qualified SWPPP Practitioner ("QSP") for each site covered by the Construction General Permit.

*Table 5.6-2
Impaired Proposed Project Site Receiving Water Bodies and TMDLs
(EPA 303d)*

<i>Watershed</i>	<i>Pollutant of Concern</i>	<i>303(d)/TMDL</i>	<i>Phase</i>
Serrano Creek	Ammonia	2010 303(d) Listed	2021
	Indicator Bacteria	2010 303(d) Listed	2021
	pH	2010 303(d) Listed	2021
San Diego Creek, Reach 1	Fecal Coliform	2010 303(d) Listed	Expected 2019
	Selenium	2010 303(d) Listed	Delayed as of 2012*
	Toxaphene	2010 303(d) Listed	Part of Orange County Watershed (OC) TMDL
San Diego Creek, Reach 2	Metals	2010 303(d) Listed	Delayed as of 2012*
	Indicator Bacteria	2011 303(d) Listed**	Expected 2021
Lower Newport Bay	Chlordane	2010 303(d) Listed	Part of OC TMDL
	Copper	2010 303(d) Listed	Delayed as of 2012*
	DDT	2010 303(d) Listed	Part of OC TMDL
	PCBs	2010 303(d) Listed	Part of OC TMDL
	Sediment Toxicity	2010 303(d) Listed	Expected 2019
Upper Newport Bay	Chlordane	2010 303(d) Listed	Part of OC TMDL
	Copper	2010 303(d) Listed	Delayed as of 2011*
	DDT	2010 303(d) Listed	Part of OC TMDL
	PCBs	2010 303(d) Listed	Part of OC TMDL
	Sediment Toxicity	2010 303(d) Listed	Expected 2019
	Metals	2010 303(d) Listed	Expected 2019
Newport Bay	Fecal Coliform	River Basin (RB) TMDL	In Effect 2000
San Diego Creek/Newport Bay			
	Sediment	RB TMDL	In Effect 1999
	Diazinon/Chlorpyrifos	RB TMDL	In Effect 2004
	Organochlorine Compounds (OC)	RB TMDL	Pending
	Nutrient	RB TMDL	In Effect 1999

Source: http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2010_epa.shtml

* - Discussion with John Peng, Orange County Stormwater Program, April 24, 2012.

** - Added by USEPA in 2011 after reviewing California's list.

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*Table 5.6-3
TMDL Status of Proposed Project Site Receiving Water Bodies
(303d and RWQCB, Santa Ana)*

<i>Watershed</i>	<i>Pollutant of Concern</i>	<i>TMDL Status</i>
Newport Bay	Fecal Coliform	Santa Ana RWQCB Resolution Order 99-10 amended the Santa Ana Basin Plan to incorporate a TMDL for Fecal Coliform in Newport Bay. The counties and cities within the watershed are named as stakeholders on this TMDL. In response to Letter 13267 from the Santa Ana RWQCB, the Newport Watershed Permittees, IRWD and the Irvine Company are currently supporting studies and monitoring the Bay.
San Diego Creek/ Newport Bay	Metals	In 2002, in response to a 1996 lawsuit, EPA issued the Toxics TMDL for San Diego Creek/Newport Bay. This TMDL covers 14 different constituents, including several currently used and banned pesticides, copper and other metals and PCBs. The Santa Ana RWQCB is preparing the corresponding state TMDLs but has decided to issue five separate constituent and geographically specific TMDLs. When adopted, these State TMDLs will supersede the EPA TMDL. Santa Ana RWQCB is still in data collection stage.
	Sediment	The Santa Ana RWQCB issued Resolution Order 98-101 to amend the Santa Ana Basin Plan to incorporate a TMDL for sediment in Newport Bay and San Diego Creek. The counties and cities within the watershed are named as stakeholders on this TMDL. The objectives of the TMDL are to reduce the annual average sediment load in the San Diego Creek watershed from a total of 250,000 tons per year to 125,000 tons per year, thereby reducing the sediment load to Newport Bay to 62,500 tons per year within 10 years (a 50% reduction) and to lower the frequency of dredging.
	Diazinon/ Chlorpyrifos	The Santa Ana RWQCB adopted TMDLs on 4/4/2003. The Waste Load Allocation (WLA) is 72 ng/L acute Diazinon and 45 ng/L chronic Diazinon. WLA is 18 ng/L acute Chlorpyrifos and 12.6 ng/L chronic Chlorpyrifos. County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach and the agricultural operators in Newport Bay watershed are named stakeholders.
	Organochlorine Compounds	A technical TMDL for Toxic Pollutants, San Diego Creek and Newport Bay, was promulgated by EPA Region 9 in June 2002. The Constituents addressed in the TMDL included the organophosphate (OP) pesticides, selenium, metals and organochlorine (OC) compounds. The Santa Ana RWQCB approved the organochlorine compounds TMDL on 9/7/2008.
	Nutrient	Santa Ana RWQCB Resolution 98-9 as amended by 98-100 amended the Santa Ana Basin Plan to incorporate a TMDL for Nutrients for Newport Bay/San Diego Creek. The TMDL establishes targets for reducing the annual loading of nitrogen and phosphorus to Newport Bay by 50% and meeting the numeric and narrative water quality objectives by 2012. To achieve these targets, the TMDL establishes a number of interim targets requiring a 30% and 50% reduction in nutrients in summer flows by 2002 and 2007, respectively, and a 50% in non-storm winter flows by 2012. As of 2011, the Santa Ana RWQCB is considering revising the TMDL and establishing new water quality objectives for nitrogen in tributaries to Newport Bay*.

Source: <http://www.ocwatersheds.com/TMDL.aspx>

* Discussion with Jain Peng, Orange County Stormwater Program, April 24, 2012.

A SWPPP must include a risk level determination based upon the project's sediment risk and receiving water risk. Based on the combined risks, a Risk Level is assigned to each project, Risk Level 1, 2, or 3. Risk Level 1 is the least stringent, while Risk Level 3 is the most stringent. Based on the project's Risk

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Level, BMPs are designed to reduce potential impacts to surface water quality through the construction and life of the project. Order No. 2009-0009 DWQ includes the following additional elements:

- Annual Reports are to be submitted each year the permit is active and all standards and BMPs outlined in the project SWPPP shall be followed and enhanced as necessary to maintain the project in compliance with the then current Construction General Permit.
- Minimum BMPs include good site management for construction materials, waste management, vehicle storage and maintenance, landscape materials, and potential pollutant sources; non-stormwater management; erosion controls; sediment controls; and run-on and runoff controls. Site-specific project risk-level determination for sediment and receiving water (such as if stormwater discharges directly or indirectly into a Section 303d listed impaired water body) yields additional BMP measures.
- Primary sediment control BMPs (interceptors/barriers) include perimeter protection, natural channel barriers, and storm drain inlet protection to prevent temporary construction-related erosion from entering into permanent drainage systems. Primary erosion control BMPs include preserving existing vegetation, tracking, and soil stabilization within 14 days after completion. In addition, dust control measures and stockpile protection are required year-round.
- A Sampling and Analysis Plan instituted for sediment related and non-visible pollutants in stormwater discharges attributed to a breach or malfunction of a BMP or if contaminants stored or used on the construction site are not properly contained and result in a spill. In addition, each site SWPPP receives a site-specific Risk Level determination based on sediment and receiving water risks (such as if stormwater discharges directly or indirectly into a Section 303d listed impaired water body) that yield specific Stormwater discharges sampling and testing requirements for pH and turbidity.
- Year-round Construction Site Monitoring and SWPPP inspection, maintenance and repair based upon site-specific risk level determination requirements. As a minimum, construction site monitoring shall be performed once every 7 days, prior to and after storm events, and at least once each 24-hour period during extended storm events (normal work days, daylight hours). Quarterly non-stormwater monitoring is also required.

The primary objective of the SWPPP is to identify, construct, implement and maintain proper BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction. The SWPPP also outlines the monitoring and sampling program required to verify compliance with the requirements of effluent discharge. Depending upon the project Risk Level, Numeric Action Levels (“NALs”) and Numeric Effluent Limitations (“NELs”) are set by the Construction General Permit for stormwater discharges from construction sites. Compliance with the Construction General Permit is used as one method of evaluating a project's construction-related impacts on surface water quality.

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5.6.2.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City of Irvine has determined that a project would normally have a significant effect on the environment if the project would:

- HYD-1 Violate any water quality standards or waste discharge requirements.
- HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site.
- HYD-5 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- HYD-6 Otherwise substantially degrade water quality.

Note that Potential Impacts HYD-4, HYD-5, HYD 7, and HYD-8, are addressed above in Subsection 5.6.1, *Hydrology*. For analysis of the 2012 Modified Project under Potential Impact HYD-2, see Subsection 5.12.1, *Water Supply*, in Section 5.12, *Utilities and Service Systems*, of this DSSEIR.

5.6.2.3 The 2011 Approved Project

The 2011 Approved Project will convert former agricultural and military uses on the former MCAS to primarily residential and commercial uses. As stated in Section 5.6.1, above, the 2011 Approved Project includes all of the mitigation measures from the 2011 Certified EIR and associated MMRP, and all of the analyses, studies and reports prepared to implement those mitigation measures. The 2011 Approved Project includes the following Conceptual Project Water Quality Management Plan (WQMP) prepared in conformance with the Orange County DAMP standards.

- *Conceptual Project Water Quality Management Plan (WQMP), Updating the Integrated Master Plan of Drainage, Water Quality and Habitat Mitigation, Orange County Great Park Neighborhoods*, RBF Consulting, April 20, 2009, update and clarification August 11, 2011.

With the proposed removal of many features of the former MCAS, the 2011 Approved Project was calculated to achieve a total net reduction in Approved Project Site watershed imperviousness of roughly 15 percent, resulting in a regional watershed percent imperviousness of roughly 41 percent.

Mitigation Measure H/WQ1 requires that a SWPPP be prepared prior to the approval of grading permits for any portion of the Approved Project Site in order to reduce sedimentation and erosion. The SWPPP must include the adoption of erosion and sediment control practices such as desilting basins and construction site chemical control management measures.

Mitigation Measure H/WQ2 requires demonstration that all stormwater runoff and dewatering discharges from the Approved Project Site be managed to the maximum extent practicable (“MEP”) or treated as appropriate to comply with water quality requirements identified in the Basin Plan, including the TMDL Implementation Plan adopted for the San Diego Creek/Upper Newport Bay Watershed.

The WQMP implements standards from the DAMP based on the Approved Project Site’s imperviousness, land use type, and downstream receiving water characteristics by incorporating project design features

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(“PDFs”) and BMPs which reduce discharges of pollutants of concern from the 2011 Approved Project to the maximum extent practicable.

The pollutants of concern that were identified for the 2011 Approved Project by the above-referenced WQMP are listed in Table 5.6-4.

*Table 5.6-4
2011 Approved Project Pollutants of Concern*

<i>Land Use</i>	<i>Pollutant Concerns:</i>
Agriculture and Parks	Pesticides, Nutrients, Bacteria
Educational/Exposition Center/Research and Development, Commercial and Industrial	Bacteria, Nutrients, Pesticides, Sediments, Trash, Oxygen Demanding Substances, Oil and Grease, Metals
Residential	Bacteria, Nutrients, Pesticides, Sediments, Trash, Oxygen Demanding Substances, Oil and Grease, Metals
Roadway	Metals, Organic Compounds, Sediment, Trash, Oil and Grease, Bacteria, Nutrients, Pesticides, Oxygen Demanding Substances

Source: RBF Consulting, 2009; Update and Clarification, August 2011

Through the WQMP, the 2011 Approved Project incorporates source control, site design and treatment control measures as generally described below:

Site Design BMPs

Site design BMPs decrease the amount of potential runoff where practical to mimic pre-development hydrology to the maximum extent practicable. The 2011 Approved Project incorporates the following site design BMPs as part of its WQMP:

1. Conservation of Natural Areas to reduce imperviousness.
2. Disconnection of directly connected impervious areas allowing greater natural infiltration and time of concentration to downstream watercourses.

Source Control BMPs

Source controls are BMPs that are intended to reduce the amount of pollutants mobilized during rain storm or other events. They include both non-structural and structural BMPs. Table 5.6-5 lists the source control BMPs incorporated into the 2011 Approved Project:

Treatment Control BMPs

Treatment control BMPs capture stormwater before it leaves the site and cleanse the water through various processes prior to discharge, or infiltrate the water where practical to mimic pre-development hydrology to the maximum extent practicable.

The 2011 Approved Project incorporates several treatment control BMPs through its approved WQMP. The main treatment control BMP identified by the WQMP is the incorporation of 13 water quality (bioretention) facilities designed according to the Irvine Ranch Water District’s NTS Master Plan Design

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Guidelines, in addition to existing NTS Site 18 (Marshburn Retarding Basin). Of these 13 facilities, five drain into Marshburn Channel, one drains into Bee Canyon Channel, four drain into Agua Chinon, two drain into Borrego Canyon Channel, and one drains into Serrano Creek. These Natural Treatment System (NTS) facilities are designed to capture 80 percent of the average annual runoff from the developed areas of the Approved Project Site, and to cleanse the captured water through the settlement of particles and direct infiltration in areas where the underlying strata is permeable. In addition, these facilities are designed to capture and either evapotranspire or treat summer dry-weather nuisance flows in order to reduce discharges to downstream receiving waters to the maximum extent practicable (MEP) (ENGEO 2012). A more complete list of Treatment Control BMPs incorporated into the 2011 Approved Project by the WQMP is presented in Table 5.6-6.

The bioretention cell design met the applicable standard for MEP treatment of post-construction stormwater flows as defined by the Orange County Stormwater Program MS4 permit (Orange County MS4), since the facilities would promote on-site detention and infiltration, when feasible, of stormwater during rainfall events in a manner intended to mimic pre-development hydrologic conditions throughout the Approved Project Site, as well as at points of discharge. These combined elements will reduce geomorphic impacts associated with changes in flow, duration or volume of existing downstream watercourse hydrographs, known as watershed “hydromodification” (hydrograph modification).

Because site imperviousness is similar to or slightly reduced in the 2011 Approved Project condition as compared to the former MCAS condition, the 2011 Certified EIR considered the effects of hydrograph modification to downstream receiving waters due to implementation of the 2011 Approved Project to be negligible.

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Table 5.6-5
2011 Approved Project Source Control BMPs

<i>BMPs</i>	<i>Residential</i>	<i>Commercial</i>	<i>Industrial</i>	<i>Recreational</i>
Structural Source Control BMPs				
Storm Drain Stenciling	X	X	X	X
Outdoor Material Storage		X	X	X
Trash/Waste Storage	X	X	X	X
Irrigation Systems and Landscape Design	X	X	X	X
Slope and Channel Protection/Energy Dissipation	X	X	X	X
Maintenance Bay and Docks		X	X	
Vehicle Wash Areas		X	X	
Outdoor Processing Areas		X	X	
Equipment Wash Areas		X	X	
Fueling Areas		X	X	
Hillside Landscaping	X	X	X	X
Wash Water Control		X	X	
Car Wash Racks	X	X	X	
Non-Structural Source Control BMPs				
Educational Materials	X	X	X	X
Activity Restriction		X	X	
Common Area Landscape Management	X	X	X	X
BMP Maintenance	X	X	X	X
Title 22 CCR Compliance		X	X	
Local Industrial Permit Compliance			X	
Spill Contingency Plan		X	X	
Underground Storage Tank Compliance		X	X	
Hazardous Materials Disclosure		X	X	
Uniform Fire Code Implementation	X	X	X	X
Common Area Litter Control	X	X	X	X
Employee Training		X	X	X
Loading Dock Housekeeping		X	X	
Common Area Catch Basin Inspection	X	X	X	X
Street Sweeping	X	X	X	X
Commercial Vehicle Washing		X		
Retail Gasoline Outlets		X		

Source: RBF Consulting, 2009; Update and Clarification, August 2011

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Table 5.6-6
2011 Approved Project Treatment Control BMPs

<i>BMPs</i>	<i>Residential</i>	<i>Commercial</i>	<i>Industrial</i>	<i>Recreational</i>
Bioretention	X	X	X	X
Vegetated Strips	X	X	X	X
Vegetated Swales	X	X	X	X
Extended Detention Basins	X	X		X
Wet Detention Basins	X	X	X	X
Constructed Wetland	X	X	X	X
Porous Landscape Detention	X	X	X	X
Permeable Surfaces	X	X	X	X
Infiltration Basins		X	X	X
Infiltration Trench		X	X	X
Media Filters	X	X	X	X
Proprietary Control Measures	X	X	X	X

Source: RBF Consulting, 2009; Update and Clarification 2011

5.6.2.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to both the 2011 Approved Project and the 2012 Modified Project and that will help to reduce and avoid potential impacts related to water quality:

PPP 6-2 Prior to the issuance of a precise grading permit, the applicant shall submit a groundwater survey of the site. The analysis shall be prepared by a geotechnical engineer versed in groundwater analysis and shall include the following information and analysis (Standard Condition A.7):

- Potential for perched groundwater intrusion into the shallow groundwater zone upon buildout.
- Analysis for relief of groundwater buildup and properties of soil materials on-site.
- Impact of groundwater potential on building and structural foundations.
- Proposed mitigation to avoid potential for groundwater intrusion within five feet of the bottom of the footings.

PPP 6-3 This project will result in soil disturbance of one or more acres of land that has not been addressed by an underlying subdivision map. Prior to the issuance of preliminary or precise grading permits, the applicant shall provide the City Engineer with evidence that a Notice of Intent (NOI) and relevant Permit Registration Documents have been filed with the State Water Resources Control Board and that a Waste Discharge Identification (“WDID”) Number

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is issued. Such evidence shall consist of a copy of the NOI Receipt letter with WDID retrieved from the State Water Resources Control Board Stormwater Multi-Application and Report Tracking System (SMARTS) website or the Regional Water Quality Control Board, or a letter from either agency stating that the NOI has been filed (Standard Condition A.10).

PPP 6-4 Prior to the issuance of precise grading permits, the applicant shall submit, and the Director of Community Development shall have approved, a project water quality management plan (WQMP). The WQMP shall identify the best management practices that will be used on the site to control predictable pollutant runoff (Standard Condition A.13).

As detailed below, although the 2012 Modified Project includes minor changes to the distribution of land uses on the Proposed Project Site as it relates to water quality, these changes equate to approximately the same site imperviousness as the 2011 Approved Project. (Please refer to Chapter 3, *Project Description*, for a complete description of the 2012 Modified Project.) Therefore, water quality impacts associated with the 2012 Modified Project would be substantially the same as those associated with the 2011 Approved Project, and the water quality impacts of both the 2012 Modified Project and the 2011 Approved Project would be less than significant.

Methodology

The following technical study (see Appendix H to this DSSEIR) has been prepared to analyze potential water quality impacts of the 2012 Modified Project as compared to those of the 2011 Approved Project, based on the 2012 Modified Project's land uses:

- *Project Water Quality Technical Report*, ENGEO Incorporated, June 22, 2012.

This report concludes that the 2012 Modified Project would result in approximately the same overall net impervious area as the 2011 Approved Project, and would include the same general land uses and pollutants of concern. Since the 2012 Modified Project makes only minor refinements to the 2011 Approved Project as it relates to water quality, as outlined in the Project Water Quality Technical report, the impacts of the 2012 Modified Project will be similar to those of the 2011 Approved Project, and both would be less than significant.

IMPACT 5.6.2-1: THE 2012 MODIFIED PROJECT WOULD NOT SUBSTANTIALLY ALTER THE DRAINAGE PATTERN OF THE PROPOSED PROJECT SITE OR AREA, INCLUDING THROUGH THE ALTERATION OF THE COURSE OF A STREAM OR RIVER, IN A MANNER WHICH WOULD RESULT IN SUBSTANTIAL EROSION OR SILTATION ON- OR OFF-SITE. [IMPACT HYD-3]

According to the Orange County Stormwater Program DAMP, the 2012 Modified Project's post-construction water quality impacts would differ from those of the 2011 Approved Project if the 2012 Modified Project's drainage patterns were different. Since the 2011 Approved Project and the 2012 Modified Project both contain the same land uses, develop generally the same land areas and generally have the same site imperviousness, the drainage patterns for the 2012 Modified Project would be the same as for the 2011 Approved Project. Therefore, the 2012 Modified Project's and the 2011 Approved Project's water quality impacts are the same and, are less than significant.

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IMPACT 5.6.2-2: THE 2012 MODIFIED PROJECT WOULD NOT SIGNIFICANTLY INCREASE WATER POLLUTANT CONCENTRATIONS IN RUNOFF FROM THE PROPOSED PROJECT SITE DURING LONG-TERM OPERATION OR ALTER THE QUALITY OF STORMWATER RUNOFF, OR OTHERWISE SUBSTANTIALLY DEGRADE WATER QUALITY, AS COMPARED TO THE 2011 APPROVED PROJECT. [IMPACTS HYD-1, HYD-5 AND HYD-6]

Construction Phase Water Quality Impacts

Like the 2011 Approved Project, the 2012 Modified Project incorporates mitigation measure H/WQ 1, which requires that, prior to issuance of a grading permit, the project applicant demonstrate that construction of the 2012 Modified Project will comply with the requirements of the NPDES General Construction Permit to ensure that construction activities reduce, to the maximum extent practicable, their water quality impacts. Among other requirements, a SWPPP must be prepared prior to the approval of grading permit(s) for any portion of the Proposed Project Site exceeding 1 acre in disturbed area (or part of a larger development) in order to reduce sedimentation and erosion that could impact downstream receiving waters. The 2012 Modified Project also incorporates mitigation measure H/WQ 2, which requires that, prior to the issuance of a grading permit, a construction management plan be submitted to demonstrate that all storm water runoff and dewatering discharges from the Proposed Project Site will be managed to the maximum extent practicable or treated as appropriate to comply with water quality requirements identified in the Santa Ana Basin Plan.

Although the footprint of the 2012 Modified Project's disturbed area differs slightly from the 2011 Approved Project's footprint due to land plan refinements and the inclusion of the 11 additional acres (currently included in PA 9) into proposed Combined PA 51, no significant impacts would result. Implementation of the SWPPP and compliance with the NPDES General Construction Permit and the Santa Ana Basin Plan during construction (land development, utility/streets, vertical, landscaping, and inactive) would ensure that the 2012 Modified Project's construction phase water quality impacts will be, like those of the 2011 Approved Project, less than significant.

Post-Construction Water Quality Impacts

According to the Orange County Stormwater Program DAMP, the 2012 Modified Project's post-construction water quality impacts would differ from those of the 2011 Approved Project if the 2012 Modified Project's Pollutants of Concern were different. Since the 2011 Approved Project and the 2012 Modified Project both contain generally the same types of land uses, develop generally the same land areas, and generally have the same site imperviousness, the Pollutants of Concern for the 2012 Modified Project would be the same as for the 2011 Approved Project. Therefore, the 2012 Modified Project's and the 2011 Approved Project's water quality impacts are the same, and are less than significant.

The 2012 Modified Project impacts to storm drainage systems are addressed above in Section 5.6.1 and are not analyzed further here.

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5.6.2.5 Cumulative Impacts

The area surrounding the Proposed Project Site in the San Diego Creek Watershed is either already developed, approved for development or planned for development. As is true for the 2011 Approved Project, by adherence to the Orange County DAMP standards, which is required of all new development and redevelopment projects, the cumulative water quality impact of the 2012 Modified Project together with additional development in the area would be regulated in conformance with Santa Ana Basin Plan standards adopted by the Santa Ana RWQCB. These standards take a watershed scale approach to water quality issues and are periodically updated based on regional water quality studies. These studies include additional specific constituents of concern (TMDLs) and broader objectives (Beneficial Uses). Also, the Maximum Extent Practicable (MEP) standard associated with water quality mitigation is reevaluated periodically based on advances in technology associated with project design features and regulated through the Santa Ana RWQCB and the Orange County DAMP standards.

While related projects could result in erosion and sedimentation impacts during construction, such projects would also comply with Construction General Permit requirements regarding preparation and implementation of SWPPPs and implementation of BMPs for minimizing construction water quality impacts. Cumulative impacts on water quality from construction activities would be less than significant.

Therefore, through the regulatory approval process, additional development would also mitigate to a level considered to be less than significant. As such, like those of the 2011 Approved Project, the 2012 Modified Project's cumulative impacts related to water quality would be less than significant.

Mitigation Program and Net Impact

The 2012 Modified Project would have minor changes in the impervious surfaces, as compared to the 2011 Approved Project, and would only result in minor changes to the 2011 Approved Project's drainage patterns and peak flows. In general, the drainage areas, discharge points, and peak flow discharges will be consistent with the 2011 Approved Project. Because the source controls and structural practices for surface water quality management are the same, the post-construction water quality Best Management Practices (BMPs) proposed in the 2012 Modified Project are consistent with the NTS Water Quality Facilities and other BMPs used in the 2011 Approved Project, and both the 2012 Modified Project and 2011 Approved Project water quality BMPs are consistent with BMPs described in the approved Conceptual Project Water Quality Management Plan (RBF, August 2009 Update and Clarification August 2011). In addition, the conversion from non-residential uses to residential uses will not significantly alter the types of urban pollutants generated on-site and no changes to the water quality BMPs are necessary. As is true for the 2011 Approved Project, any drainage improvements constructed as part of the 2012 Modified Project would be subject to the Orange County DAMP standards. No additional mitigation measures are introduced in this DSSEIR as water quality impacts would be less than significant with the mitigation measures identified in the 2011 Certified EIR and associated MMRP.

Applicable Mitigation Measures from the 2011 Certified EIR

Like the 2011 Approved Project, the 2012 Modified Project will incorporate two mitigation measures to reduce its effects on water quality. Implementation of already imposed Mitigation Measures H/WQ1 and H/WQ2 (listed below) ensure that the 2012 Modified Project's impacts on water quality will be less than significant.

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H/WQ1 Prior to issuance of a grading permit, the applicant shall provide evidence that the development of the project area shall comply with City of Irvine adopted Grading and Water Quality Ordinances to ensure that the potential for soil erosion is minimized on a project-by-project basis. Specifically, the NPDES discharge permitting requirements to which the City is obligated will ensure that construction activities reduce, to the maximum extent feasible, the water quality impacts of construction activities. The NPDES permit guidance states that “industrial/commercial construction operations that result in a disturbance of one acre or more of total land area...and residential construction sites that result in the disturbance of five acres or more...shall be required to develop and implement BMPs...to control erosion and siltation and contaminated runoff from the construction sites.” Note: In March 2003 this provision will apply to residential construction sites that result in the disturbance of one acre or more.

The City’s standard conditions of approval indicate that a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared prior to the approval of grading permits for any project site in order to reduce sedimentation and erosion. The SWPPP shall include the adoption of erosion and sediment control practices such as desilting basins and construction site chemical control management measures.

Additionally, prior to the issuance of a grading permit, project applicants must submit, and the Director of Community Development or designee must have approved, a Water Quality Management Plan (WQMP). The WQMP must identify the Best Management Practices (BMPs) that will be used on the site to control predictable pollutant runoff after the site is occupied. Ongoing operations after construction would be subject to the Countywide Municipal NPDES Stormwater Permit, for which the City is a Co-Permittee. This WQMP shall identify, at a minimum, the routine, structural, and non-structural measures specified in the Countywide NPDES DAMP Appendix which they are applicable to a project, the assignment of long-term maintenance responsibilities (specifying the developer, parcel owner, maintenance association, lessee, etc.), and shall reference the location(s) of structural BMPs.

Also in accordance with standard City project permitting and approval procedures, Notices of Intent (NOI) for coverage of projects under the General Construction Activity Storm Water Runoff Permit will be submitted to the State Water Resources Control Board prior to issuance of grading permits in the project area. This requirement will be met to the satisfaction of the Director of Community Development of any disturbance of one acre or more of soil in the project area. Also in force during the period of construction would be the General Dewatering NPDES permit of the Santa Ana RWQCB, as well as the provisions of the Countywide Permit.

The Mitigation Measures will be implemented in accordance with local and State regulatory requirements. As future projects are planned and designed in the project area, specific BMPs and other water quality control methods will be utilized to reduce water quality degradation in the Newport Bay watershed. Future projects in the proposed project area will acknowledge and implement those additional requirements that may be imposed by RWQCB in the future. Compliance with these measures shall be verified by the Community Development Department.

H/WQ2 Prior to issuance of a grading permit, evidence (e.g., in the form of a construction management plan) shall be provided that demonstrates that all stormwater runoff and dewatering discharges from the project area shall be managed to the maximum extent practicable or treated as appropriate to comply with water quality requirements identified in the Santa Ana Regional Water quality Control Board Basin Plan, including Total Maximum Daily Load (TMDL) Implementation Plan adopted for this watershed.

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5.6.2.6 Level of Significance Before Additional Mitigation

With implementation of the same regulatory requirements, mitigation measures and standard conditions of approval that are already included in the 2011 Approved Project, the 2012 Modified Project's impacts on water quality, including Impacts 5.6.2-1 and 5.6.2-2 discussed above would be less than significant.

5.6.2.7 Additional Mitigation for the 2012 Modified Project

No additional mitigation measures are required because the 2012 Modified Project's impacts on water quality would be less than significant prior to any additional mitigation.

5.6.2.8 Level of Significance After Additional Mitigation

All of the 2012 Modified Project's impacts on water quality would be less than significant upon implementation of regulatory requirements, the standard conditions of approval, and the mitigation measures already in place under the 2011 Approved Project.

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5.5 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential impacts of the 2012 Modified Project on human health and the environment due to exposure to hazardous materials or conditions associated with the Proposed Project Site, project construction, and project operations. Potential project impacts and appropriate mitigation measures or standard conditions are included as necessary. The analysis in this section is based, in part, upon the following sources:

- *Orange County Great Park EIR*, City of Irvine, May 2003
- *Orange County Great Park EIR*, City of Irvine, Addenda 1 through 8, May 2006 through October 2011
- *2011 SEIR to the 2003 Orange County Great Park EIR*, City of Irvine, September 2011.

In addition, numerous reports relating to hazards and hazardous materials have been prepared concerning the Proposed Project Site, including:

County of Orange. August 2001. *MCAS El Toro Community Reuse Plan FEIR, Volume 2B*.

Earth Tech Inc. April 2003. *Draft Final Environmental Baseline Survey, Former Marine Corps Air Station, El Toro, California*.

Earth Tech Inc. September 2003. *Final Environmental Baseline Survey, Former Marine Corps Air Station, El Toro, California*.

ENGEO Incorporated. October 2011. *Phase I Environmental Site Assessment. TCA Property, Heritage Fields, Irvine, California*.

Leighton and Associates, Inc. December 2006. *Residual Organochlorine Pesticide Soil Sampling Report, Transportation Oriented District, Proposed Heritage Fields Development at the Former Marine Corps Air Station El Toro, City of Irvine, California*.

_____. December 2006. *Aerially Deposited Lead Investigation, Transportation Oriented District, Proposed Heritage Fields Development at the Former Marine Corps Air Station El Toro, City of Irvine, California*.

Weston Solutions, Inc. 2004. *Draft Radiological Release Report, IRP Sites 3 and 5 (including APHO 46), Anomaly Area 3, and Building 244, Former Marine Corps Air Station, El Toro, California*.

U.S. Department of the Navy. September 1997b. *Final Record of Decision, Operable Units 2A and 3A, No Action Sites, Marine Corps Air Station El Toro, California*. Southwest Division, Naval Facilities Engineering Command, San Diego, California.

_____. June 2001. *Final Record of Decision, Operable Unit 3B, No Action Sites 7 and 14, Marine Corps Air Station, El Toro, California*. Southwest Division, Naval Facilities Engineering Command, San Diego, California.

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_____. May 2002a. *Base Realignment and Closure Business Plan for Marine Corps Air Station, El Toro, California*. Southwest Division, Naval Facilities Engineering Command, San Diego, California.

_____. June 2002b. *Record of Decision for Operable Unit 1, Site 18 – Regional Volatile Organic Compound Groundwater Plume, Operable Unit 2A – VOC Source Area, Former Marine Corps Air Station, El Toro, California*.

_____. 2004. *Final Finding of Suitability to Lease for Carve-outs Within Parcels I, II, and III, Former Marine Corps Air Station, El Toro, California*.

_____. 2004. *Final Finding of Suitability to Transfer (Parcel IV and Portions of Parcels I, II, and III), Former Marine Corps Air Station, El Toro, California*.

_____. 2005. *Final Finding of Suitability to Transfer #2 (Portions of Parcels II and III), Former Marine Corps Air Station, El Toro, California*.

_____. April 2006. *Final Record of Decision, Operable Units 2A – Site 24, VOC Source Area Vadose Zone, Former Marine Corps Air Station El Toro, California*. Southwest Division, Naval Facilities Engineering Command, San Diego, California.

_____. 2007a. *Final Record of Decision, Operable Unit 3A, Sites 8, 11, and 12, Marine Corps Air Station, El Toro, California*.

_____. 2008. *Final Finding of Suitability to Transfer#3 (Carve-outs I-C and II-U), Former Marine Corps Air Station, El Toro, California*.

_____. 2009. *Final Finding of Suitability to Transfer #4 for Carve-Outs I-B, I-E, I-G, I-H, I-I, I-J, I-L, I-M, I-P, II-G, II-I, II-P, and III-D, Former Marine Corps Air Station, El Toro, California*.

_____. 2010. *Final Finding of Suitability to Transfer #5 for Carve-Outs I-F, I-K, I-N, I-O, I-S, II-E, II-L, II-M, II-R, and Building 746, Former Marine Corps Air Station, El Toro, California*.

_____. 2011. *Final Finding of Suitability to Transfer #6 for Carve-Outs I-D, I-Q, I-R, II-B, II-K, II-N, II-O, III-B-1, III-B-2, III-E, and III-F, Former Marine Corps Air Station, El Toro, California*.

The data used for the analysis in this Section is based on the data used in the Hazards and Hazardous Materials Chapter of the 2003 OCGP EIR as updated and expanded upon by the above listed references.

5.5.1 Environmental Setting

The following discussion of environmental setting is adapted from the 2011 Certified EIR and updated to reflect current conditions on the Proposed Project Site. The operation of many facilities located in Existing PA 51 historically involved the use, storage, transfer, and disposal of hazardous materials. No facilities historically involved in the use, storage, transfer, and disposal of hazardous materials were located in PA 30. The following discussion summarizes information from the Base Realignment and Closure Business Plan for MCAS El Toro, dated May 2002 (DON 2002a), and other sources that informed the 2003 OCGP EIR, as well as other relevant sources prepared after the 2003 OCGP EIR, including the Final Finding of Suitability for Transfer (“FOST”) 1 through FOST 6 documents. As described below, those six FOSTs document that all necessary remediation has been completed to protect

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human health and the environment on 3329.7 acres of the former MCAS El Toro. Information concerning remediation is subject to periodic change as additional information is generated from cleanup programs and activities that are being planned for, or are in progress. This information may be found at the MCAS El Toro Information Repository Collection located both at the Heritage Park Regional Library in Irvine, California, and at the former MCAS El Toro library.

The military mission at the former MCAS El Toro commenced towards the end of World War II and concluded with the closure of the air station in 1999. During the approximate 55 years of military operation, the air station activities and operation and maintenance of military aircraft and automotive vehicles, required the use of a large variety of hazardous materials. These hazardous materials consisted of petroleum-based products such as aviation and vehicular fuels, engine and lubricating oils, solvents, cleaners, paints, thinners, pesticides and herbicides; chlorinated/halogenated compounds, including trichloroethylene (“TCE”) and polychlorinated biphenyls (“PCB”); some radioactive materials; ordnance munitions; and propellants. Use of these materials typically involves the generation of hazardous byproducts and waste. A risk of explosion is associated with some of these materials. Oil-water separators (“OWS”) were located throughout the former air station at various facility locations. Wastewater from aircraft wash areas and vehicle wash racks passed through OWSs to the sanitary sewer and storm drainage systems. Materials recovered from the OWSs were handled as hazardous waste. Fuel storage areas also generated hazardous waste when fuel storage tanks were cleaned and sludge was pumped out, or when fueling/defueling or loading/unloading operations resulted in spills. Permitted hazardous waste storage areas were located throughout the former air station and held hazardous, flammable, and unused chemical material and wastes. Ordnance munitions were used, handled, stored, and disposed of in PA 51. Pesticides and herbicides historically were used at the former air station to control rodents, vectors, and weeds, as well as on agricultural parcels leased to farming operations. PCB transformers were in use throughout the former air station.

Although a total of 1,114 buildings have been surveyed, abated, and demolished since certification of the 2003 OCGP EIR, there are approximately 180 buildings (both residential and non-residential) remaining on the former MCAS El Toro site. Many of these remaining buildings and facilities may contain hazardous building materials such as asbestos-containing building materials (“ACM”) and lead-based paint (“LBP”). ACM is associated with respiratory ailments, including cancers, which are caused by inhaling asbestos fibers, as well as with gastro-intestinal disease associated with ingestion of ACM. Lead is known to have adverse effects on the human body, particularly in children. Exposure is usually through ingestion and inhalation. Both ACM and LBP were in common use prior to 1980 when many of the structures in Existing PA 51 were built. Prior to demolition of any of the remaining buildings, all asbestos-containing materials (1% asbestos), all assumed ACM (“AACM”), and all asbestos-containing construction materials (“ACCM”; >0.1% to 1%) will be abated in conformity with all applicable federal, State and local laws and regulations.

Many of the existing public streets in the vicinity of the Proposed Project Site were probably used by vehicles transporting hazardous materials and waste to and from Existing PA 51 and the region, which would have resulted in the potential for hazardous spills. Rail cars on the railroad tracks that traverse the Proposed Project Site may also have transported hazardous materials. Hazardous materials (jet fuel and natural gas) were also transported onto the former MCAS El Toro site by pipeline. There is an existing fuel pipeline in the railroad right-of-way along the southern boundary of the Proposed Project Site.

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Site Evaluation and Risk Assessment Methods

The site evaluation and cleanup method(s) selection under CERCLA is generally referred to as the Remedial Investigation and Feasibility Study process (“RI/FS”). The RI covers site assessment activities under which lead agencies evaluate the nature and extent of site contamination, general site conditions, and begin to identify possible cleanup methods. Considerations for remedial action objectives are provided in Title 40 Code of Federal Regulations Section 300.430(e)(2)(i), which states that remedial actions selected must attain a degree of cleanup and control further releases so as to, at a minimum, assure protection of human health and the environment. In the FS process, comprehensive cleanup options are developed and evaluated to select alternatives. Permanent solutions are preferred as opposed to mere containment or re-disposal of contaminated materials. The USEPA and individual states approve cleanup plans, including cleanup standards, in a formal document called a Record of Decision (“ROD”). Final cleanups should reduce contamination to levels that meet federal Clean Water Act and Safe Drinking Water Act standards as well as potentially more stringent Applicable or Relevant and Appropriate Requirements (“ARAR”) standards.

All Installation Restoration Program (IRP) sites on military installations follow the comprehensive, step-by-step CERCLA RI/FS process. Although some sites may require interim remedial actions, permanent cleanup follows the signing of a ROD. For evaluated sites that are determined to not have any contamination or have insignificant levels of contamination, no feasibility study is conducted and the process is completed with a No Further Action ROD. Some sites may require the implementation of interim remedial actions.

As lead agency, the Department of the Navy (“DON” or “Navy”) is responsible for the establishment of cleanup goals. The DON’s approach to the former MCAS El Toro site has been to evaluate and identify remediation strategies that allow for unrestricted use of as much of the land and resources as possible.

Prior to issuance of any grading permits, the Applicant will demonstrate to the City that the development will not create any increased risk to human health and the environment.

In September 2006, soil samples were collected throughout the areas currently zoned 3.2 TOD to assess the potential presence of residual organochlorine pesticide contamination and evaluate any potential human health risk that may result from the residual pesticides. In total, 38 soil samples were collected and analyzed for organochlorine pesticides by EPA Method 8081A. Sample results were compared to EPA, Region 9 Preliminary Remediation Goals (PRGs) and California Human Health Screening Levels (CHHSLs) for residential and industrial soil. No concentrations of organochlorine pesticides were detected above the EPA’s PRGs or CHHSLs for residential and industrial soil (Leighton and Associates 2006).

In October 2006, soil samples were collected to assess the potential presence of aerially deposited lead (ADL) in the soils adjacent to the Caltrans right-of-way. The data was collected to determine the best deposition of soils that would be disturbed during proposed construction. ADL is the result of tetra ethyl lead, which was added to gasoline as an anti-knocking agent. The lead was present in vehicle exhaust emissions and can now be found in soils adjacent to major thoroughfares. In total, 20 soil samples were collected and analyzed for the presence of lead by EPA Method 6010. Sample results were compared to Federal (RCRA) and State (Title 22) Hazardous Waste Criteria. None of the soil samples analyzed had contaminant concentrations in excess of total threshold limit concentrations or concentrations of at least ten times the listed Soluble Threshold Limit Concentration or in excess of the California Human Health

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Screening Level of 80 milligrams per kilogram (mg/kg); therefore, the soil is not considered hazardous waste (California CFR, Title 22, 2006) (Leighton and Associates 2006).

In addition to the RI/FS and pesticide and ADL sampling activities, a Phase I Environmental Site Assessment (“ESA”) was conducted in October 2011 for the 11 acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard. This property is being proposed for inclusion into the 2012 Modified Project to create a cohesive development governed by a unified set of land use development regulations. The Phase I ESA concluded that the site reconnaissance and records review did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the property; review of regulatory databases maintained by county, state, and federal agencies found no documentation of hazardous materials violations or discharge on the property; review of regulatory agency records and available databases did not identify contaminated facilities within the appropriate search distances that would be expected to impact the property; and assessment of surface soil did not identify any impact associated with former pesticide use or aerially deposited lead. No further environmental studies were recommended as a result of the Phase I ESA (ENGEO Incorporated 2011).

Environmental Restoration Programs at MCAS El Toro

Installation Restoration Program

The Installation Restoration Program (IRP) for the former MCAS El Toro was authorized in 1984, and the Initial Report was completed in 1986. The IRP outlined hazardous remediation needs and identified 24 sites (Sites 1-22, 24, and 25) for investigation at the former MCAS El Toro. The IRP sites were originally divided into two categories: No Further Action sites (Table 5.5-1) and Action Required sites (Table 5.5-2). The IRP Sites identified as Action Required sites are depicted on Figure 5.5-1, *Installation Restoration Program Sites*. The Action Required IRP sites that are located within the Proposed Project Site include Anomaly Area 3, and IRP Sites 3, 5, 8, 12, 16, 18, and 24.

*Table 5.5-1
No Further Action IRP Sites and Zoning*

<i>IRP Site</i>	<i>IRP Site Description</i>	<i>Existing Zoning District</i>	<i>Proposed Zoning District</i>
4	Ferrocene Spill Area	8.1 TTOD	8.1 TTOD
6	Drop Tank Drainage Area No. 1	8.1 TTOD	8.1 TTOD
7	Drop Tank Drainage Area No. 2	1.9 Great Park	1.9 Great Park
9	Crash Crew Pit No. 1	1.9 Great Park	1.9 Great Park
10	Petroleum Disposal Area	1.9 Great Park	1.9 Great Park
13	Oil Change Area	1.9 Great Park	1.9 Great Park
14	Battery Acid Disposal	1.9 Great Park	1.9 Great Park
15	Suspended Fuel Tanks	1.9 Great Park	1.9 Great Park
19	Aircraft Expeditionary Refueling	8.1 TTOD	8.1 TTOD
20	Hobby Shop	8.1 TTOD	8.1 TTOD
21	Materials Management Group	6.1 Institutional	6.1 Institutional
22	Tactical Air Fuel Dispensing System	1.9 Great Park	1.9 Great Park

Sources: Cotton/Bridges/Associates 2002, updated by Weston 2012.

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Table 5.5-2

Action Required IRP Sites and Zoning – 2012 Modified Project

<i>IRP Site</i>	<i>IRP Site Description</i>	<i>Existing Zoning District</i>	<i>Proposed Zoning District</i>
Proposed Project Site			
3	Original Landfill	1.9 Great Park/8.1 TTOD	1.9 Great Park/8.1 TTOD
5	Perimeter Road Landfill	1.9 Great Park	8.1 TTOD
8	DRMO Storage Yard	6.1 Institutional/3.2 TOD	6.1 Institutional/8.1TTOD
12	Sludge Drying Beds	6.1 Institutional	6.1 Institutional
16	Crash Crew Pit No. 2	1.9 Great Park	1.9 Great Park
18	Groundwater Regional	1.9 Great Park/6.1 Institutional/3.2 TOD	6.1 Institutional/1.9 Great Park/8.1 TTOD
24	VOC Source Area	6.1 Institutional/1.9 Great Park/3.2 TOD	6.1 Institutional/1.9 Great Park/8.1 TTOD

Sources: Cotton/Bridges/Associates 2002, updated by Weston 2011.

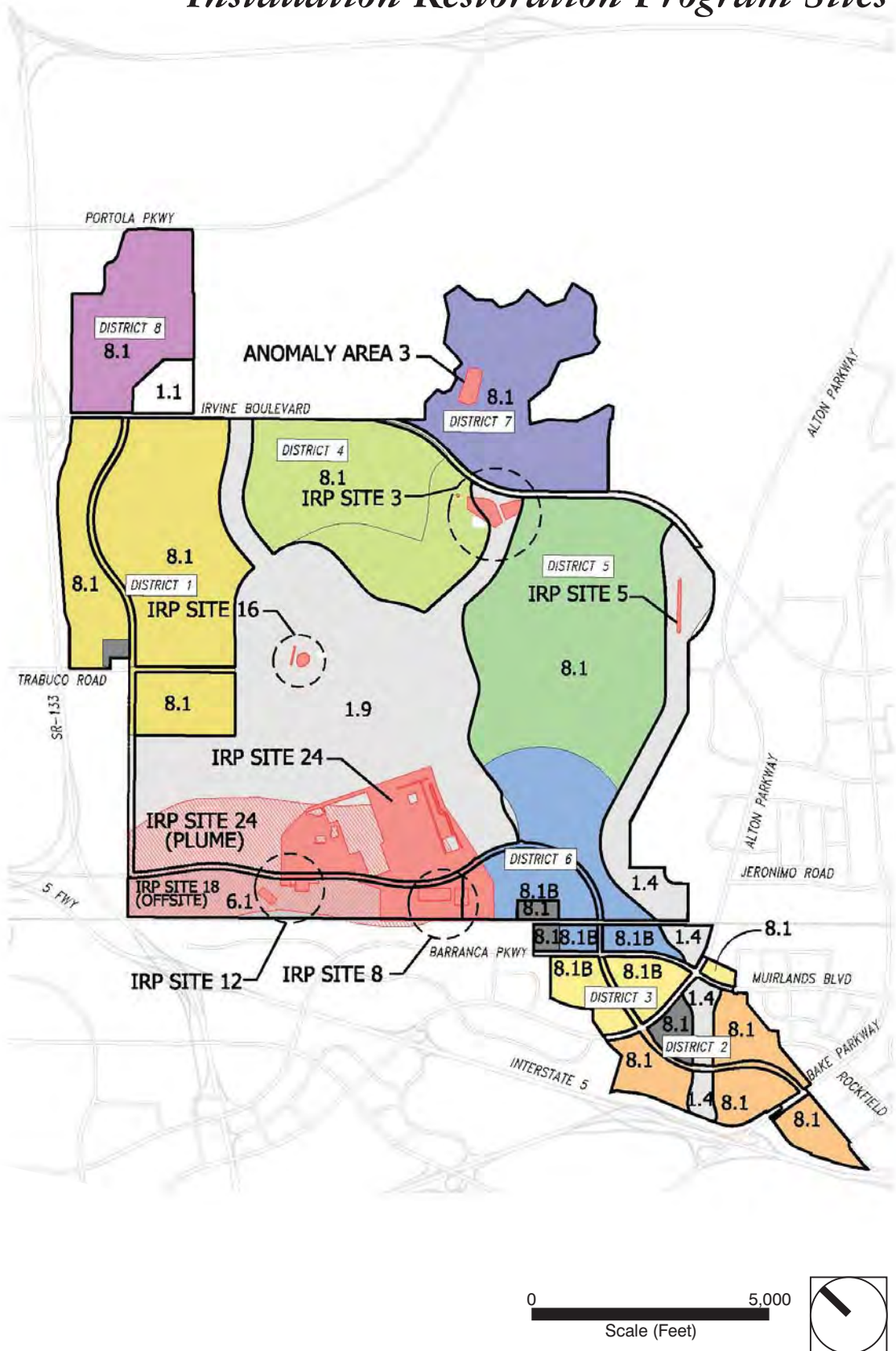
The Action Required sites and Anomaly Area 3 are currently at various stages of remedial investigation and/or cleanup. The four IRP Action Required sites that have the highest priority are Sites 18 and 24 (VOC groundwater and soil contamination) and former landfill Sites 3 and 5.

IRP Sites 18 (Groundwater-Regional) and 24 (VOC Source Area and Shallow Groundwater Unit). The two most wide spread contamination issues emanate from Sites 18 and 24. Aircraft and support vehicle maintenance that utilized industrial solvents was conducted at Site 24 (potential VOC source area) from the mid-1940s to the mid-1970s. Solvents, including TCE and other VOCs, were used for degreasing parts, painting, stripping, and aircraft and vehicular washing. Site 18 is a VOC plume caused by VOC contaminants leaching from Site 24 through the subsurface soils (vadose zone) into the shallow aquifer and then to the deeper aquifer, which flows generally to the northwest. Site 18 currently extends roughly from Site 24 down-gradient approximately three miles (west and northwest) into the City of Irvine.

Remediation for Sites 18 and 24 is a two-step process. Soil remediation of Site 24 by soil vapor extraction (“SVE”) was planned to prevent or significantly minimize further impact to the groundwater. The interim ROD for Site 24 was signed in 1997, and SVE treatment commenced in 1999. Testing of the vadose zone was completed in 2000 and a draft closure report was issued in 2001. For Site 18, the DON, the Orange County Water District (“OCWD”), and the Irvine Ranch Water District (“IRWD”) negotiated an agreement to construct and operate a joint water supply treatment project that would remove contaminants from the groundwater to levels acceptable to the regulatory agencies (the “Irvine Desalter Project”).

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Installation Restoration Program Sites



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In addition to the interim ROD issued for the contaminated soil on Site 24, a final ROD for groundwater contamination at Sites 18 and 24 was signed in June 2002. Please refer to the Final Record of Decision, Operable Unit 1, Site 18 – Regional Volatile Organic Compound Groundwater Plume, Operable Unit 2A, Site 24 – VOC Source Area, Former MCAS El Toro, California (DON 2002b) for additional information. Pursuant to a settlement agreement, the Final ROD selected a groundwater extraction and VOC treatment remedy to address the TCE contamination that incorporated a modified version of the Irvine Desalter Project. The OCWD, IRWD, and the settling federal agencies, comprised of the Department of Justice (“DOJ”) and the DON, reached an agreement documenting that the Modified Irvine Desalter Project, operated by OCWD/IRWD, would accept and treat VOC-impacted groundwater from IRP Site 24 (DOJ 2001). A Draft Final (100-Percent) Design Submittal for the Irvine Desalter Project was submitted in May 2005 (Tetra Tech 2005). The Final 100-Percent Design Submittal finalized the engineering design and specifications for the Site 24 Shallow Groundwater Unit (“SGU”) remedial action at IRP Site 24 (Weston 2005). The ongoing groundwater remedy of extracting and treating VOC-impacted groundwater began in 2006. A Final Performance Monitoring and Sampling and Analysis Plan (“PMP”) for OU-1 and OU-2A Groundwater Remedy was submitted in August 2007 (Earth Tech 2007). A Final Operating Properly and Successfully (“OPS”) Report for IRP Site 24 was submitted on July 13, 2010 (Weston 2010a). E-mail concurrences were provided on that OPS Report by the RWQCB on July 2, 2010, and the DTSC on July 6, 2010. The USEPA concurred with the OPS Report on September 9, 2010 (USEPA 2010). Current groundwater plume information can be obtained from the IRP Site 24 Groundwater Monitoring Report (Weston 2010b).

IRP Sites 3 (Original Landfill) and 5 (Perimeter Landfill). IRP Site 3 (Original Landfill) covers approximately 20 acres and operated between 1943 and 1955. It was the original former MCAS El Toro landfill, which was operated as a cut-and-fill disposal facility. IRP Site 5 (Perimeter Landfill), which covers approximately 1.5 acres, operated between 1955 and the late-1960s as a cut-and-fill disposal facility. Typical of municipal landfills, Sites 3 and 5 contain a variety of materials disposed at assorted locations within the respective landfills. Please refer to the Final Remedial Design/Remedial Action Work Plan, Operable Unit 2C, IRP Sites 3 and 5, Former Marine Corps Air Station El Toro, California (Shaw, 2009), for additional information.

The initial phase of the Site 3 investigation is complete and the results are presented in the Final Technical Memorandum (Earth Tech 2005). The preliminary results indicated that waste placement areas on Site 3 were significantly smaller in size than previously reported in the RI. In addition, the investigation identified waste placement that occurred outside the previously demarcated boundaries. Further investigation activities were conducted to characterize the site. IRP Site 3 (including the approximate 100-foot buffer zone) was assigned an Environmental Condition of Property (“ECP”) area type of Category 6 because releases of hazardous substances were identified and response actions were required.

A Draft ROD was issued for Sites 3 and 5 in 1999. However, the Draft ROD was not finalized at that time due to the need to incorporate information from radiological investigations. Subsequent investigations were performed as a first step in the landfill cover remedial design and to assess potential radiological (“RAD”) contamination at Sites 3 and 5. The Final ROD (Navy, 2008) presents the selected remedial action for Sites 3 and 5 and has been updated to reflect results of the FS Addendum (Earth Tech, 2006) for Sites 3 and 5. The Navy and USEPA co-selected the following remedial actions:

- No action for groundwater at Sites 3 and 5
- No action for soil at Site 3, Units 2 and 3
- Further action for soil at Site 3, Units 1 and 4, and at Site 5

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Site 3, Unit 4 and Site 3, Unit 1 Waste Areas B through F were recommended for unrestricted reuse after wastes from those areas are consolidated into Site 3, Unit 1 Waste Area A.

Based on the comparative ranking of alternatives presented within the FS Addendum (Earth Tech, 2006), the Navy and USEPA co-selected “Alternative 4d” as the remedy of choice for Sites 3 and 5. In accordance with the Final ROD (Navy, 2008), the selected alternative for remediation at Sites 3 and 5 consists of the following primary components:

- A single-barrier cap with a flexible membrane liner (“FML”) will be used to prevent contact with landfill materials and reduce the infiltration into landfill contents.
- Land-use restrictions applying to the landfill areas and extending approximately 100 feet beyond the waste boundaries will be used to protect the landfill covers, ensure that the containment remedy and contents of the landfills are not disturbed without approval of the FFA signatories, and allow the Navy and other agencies to access the sites for maintenance and monitoring. Construction of structures within the 100-foot buffer zone will require concurrence of the FFA signatories and the California Integrated Waste Management Board (“CIWMB”).

A Final Remedial Design/Remedial Action Work Plan dated August 2009 and Operation and Maintenance/Long-Term Monitoring Plan dated November 2010 have been prepared and approved by the DTSC and the field construction activities have been completed. A Removal Action Completion Report is due to the DTSC in 2012.

IRP Sites 8 and 12. IRP Site 8 is the former Defense Reutilization and Marketing Office (DRMO) Storage Yard where PCB-containing transformer fluids were released. It operated from the mid-1970s to early 1999. Wastewater sludge was spread on land at two locations adjacent to IRP Site 12 (Sludge Drying Beds) from 1943 to 1972. Site 12 also includes former sewage and industrial wastewater treatment plant sites. The HRA Report also identified IRP Sites 8 and 12 as potentially associated with the storage or disposal of radium paint residues. According to information in the HRA Report, IRP Site 8 may have received, for temporary storage waiting for disposal, empty radium paint containers and debris from the demolition of the Radium Paint Shop at Building 296. IRP Site 12 may have received sludge contaminated with Radium 226 from the sanitary sewage treatment plant that resulted from the disposal of radium paint into the sanitary sewer system.

Investigations conducted at Site 8 include Phase I and II RIs, during which shallow soil samples were collected. These investigations indicated that VOCs, SVOCs, PAHs, PCBs, pesticides, petroleum hydrocarbons, and target analyte list metals above background levels are present in shallow soil at Site 8. Results of the sampling were used to perform risk calculations. Based on the results of risk calculations, a Draft ROD was issued that recommended No Further Action for Units 1, 2, and 4 of Site 8 (DON 1999b). Further Action was recommended for Units 3 and 5 of Site 8, due to excess risk caused by PCB and PAH concentrations. Pursuant to comments received on the Draft ROD, risk calculations were conducted, based on updated toxicity and exposure values provided by the USEPA and Cal/EPA, and the Navy issued a Final Technical Memorandum Risk Reevaluation for Sites 8 and 12 (Earth Tech 2003c). Based on additional analytical results, IRP Site 8, Unit 5 (Units 1 through 4 are located within Navy leased area CO III-B-3) was determined to require No Further Action.

IRP Site 8, Units 1 and 4 were selected for further response action under CERCLA. The development and evaluation of remedial action alternatives for Ra-226-impacted soil at IRP Site 8, Units 1 and 4 was

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conducted in a FS Addendum for IRP Site 8 (Earth Tech, 2006), which was finalized in February 2006. Following finalization of the applicable ROD (DON, 2007), and prior to issuance of the RD/RA Work Plan (Accord, 2008a), pre-excavation sampling was conducted to refine the lateral and vertical extents of non-radiological COCs exceeding their respective target cleanup goals at IRP Site 8, Unit 3 and IRP Site 12, Unit 3. Remediation of Sites 8 and 12 through excavation in accordance with the applicable ROD (DON, 2007) has been completed by the Navy and both sites are awaiting closure from regulatory agencies.

IRP Site 16. Aviation fuels (JP-5, AVGAS), chlorinated solvents, hydraulic fluid, crankcase oil, white phosphorus, magnesium phosphate, and napalm were burned in unlined pits for fire training at IRP Site 16 (Crash Crew Pit No. 2) from 1972 to 1985. A Phase I Remedial Investigation was conducted for this site. A ROD documenting the selected remedy, namely monitored natural attenuation for groundwater with institutional controls, was signed in 2003 (DON 2003). A Final OPS Report was completed in September 2007 (DON 2007) and received regulatory agency concurrence (U.S. EPA 2007, DTSC 2007, RWQCB 2007). In accordance with CERCLA Section 120(h)(3), once an OPS determination has been granted, the Navy can transfer the property subject to the covenants in CERCLA Section 120(h)(3). The Draft Remedial Action Completion Report (“RACR”) (DON, 2011) prepared for Site 16 documents that the deep vadose zone (from 10 feet below ground surface [bgs] to groundwater, which is present at approximately 170 feet bgs) response action (i.e., monitoring) is complete and No Further Action is required for the deep vadose zone at Site 16. The Draft RACR Report meets the requirements of a Closure Report as specified in the Final ROD (DON 2003). The Final ROD documented No Further Action for surface and shallow soil (0 – 10 feet bgs) at IRP Site 16. Based on the results of soil gas monitoring, petroleum corrective actions including SVE and MPE remediation, and modeling results, it is unlikely for VOCs to further impact groundwater (due to infiltration) at concentrations exceeding drinking water standards. As a result, it has been recommended that the requirement for positive drainage within the Main Pit on Site 16 be eliminated. An Explanation of Significant Differences (“ESD”) will be prepared to document the change in Land Use Controls (“LUCs”) and will be submitted to the Administrative Record File for Site 16.

Anomaly Area 3

Anomaly Area 3 (“AA3”) is an approximately 13-acre site located in the northwest section of the Proposed Project Site near Pusan Way and adjacent to the Agua Chinon Wash in zoning district designation 8.1 TTOD. AA3 is considered a former refuse disposal area for construction debris. To date, the DON has conducted a geophysical investigation, exploratory trenching, radiological screening, and installed monitoring wells and vadose zone wells. Preliminary results indicated the presence of buried metallic and construction debris, along with plastics, asbestos, pipes, wood and concrete. The 2000 HRA showed that radiological readings in the soil were at or below background levels. AA3 has therefore been considered to meet the radiological criteria for unrestricted use. Some groundwater samples exceeded the maximum contaminant levels and will be subject to further investigation. Soil levels for arsenic, total petroleum hydrocarbons, lead, and benzo(a)pyrene exceed industrial and residential Preliminary Remedial Goal standards.

The 2008 RI/FS Report presents results from the remedial investigation conducted to characterize environmental conditions at AA3 and to estimate potential risks to human health and the environment. The FS presents an evaluation of remedial alternatives. The final remedy for the site selected in the Final ROD, approved by DTSC on September 2, 2010, includes waste consolidation, grading of the existing cover, and construction of a finger dike to control storm water in the vicinity of Agua Chinon Wash. The

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selected remedy includes institutional controls which are identified in the Proposed Plan (DON, 2008). The remedial alternatives are expected to be completed by the end of 2012.

Jet Fuel Distribution System

The Defense Fuel Supply Point Norwalk Pipeline was used as a jet fuel distribution system in support of the military mission at the former MCAS El Toro. The pipeline originated in Norwalk, California, entered the Proposed Project Site near the existing commissary located adjacent to Irvine Boulevard, and ran through the former air station housing to the former storage tank facilities. A portion of the pipeline was located in Carve-out II-U. In May 1999, all the jet fuel was purged from the entire pipeline using a pigging process and was replaced with an inert gas (nitrogen). The pipeline was removed in 2006, with the exception of approximately 100 feet that remains in place under the Agua Chinon Wash. That 100-foot section of the pipeline was closed off in place. The property associated with the pipeline in Carve-out II-U was conveyed to the Applicant in FOST #3 (DON 2008).

Resource Conservation and Recovery Act Facility Assessment

A RCRA Facility Assessment (“RFA”) was conducted for the former MCAS El Toro between 1990 and 1993. The purpose of the RFA was to identify SWMUs and TAAs where there was an actual, or potential for, release of hazardous waste into the environment, and whether further actions might be required. The RFA was finalized on May 31, 1996. It presents results, recommendations and closure strategies for SWMUs and TAAs. Some of these sites are incorporated in the IRP; others are handled under alternative regulatory procedures. The RCRA sites must meet current environmental compliance requirements. The State of California considers any site from which hazardous constituents may migrate to be a SWMU, but corrective action can be addressed through the Federal Facilities Agreement for the former MCAS El Toro or through responses to petroleum releases with oversight provided by the RWQCB. DTSC has determined that all corrective action obligations required under RCRA for the property subject to FOSTs 1, 2, 3 and 4 (a total of 2854.8 acres) are complete. Final RCRA Corrective Action Complete Determination Packages are documented in FOSTs 1 through 4. Because of continuing groundwater monitoring at FOST 5 and 6 sites, RCRA corrective actions have not been determined to be complete for those sites.

Compliance Program Sites and Other Locations of Concern

A number of compliance programs are in effect at the former MCAS El Toro which cover different types of locations of concern, including USTs, less-than 90-day accumulation areas, PCB transformers, and OWSs. Many of these facilities were used to support operations on the former air station.

A storage tank assessment was conducted at former MCAS El Toro to address compliance and closure issues related to USTs/ASTs. The September 2003 Final EBS provides the most recent and comprehensive assessment of the status of storage tanks at the former MCAS El Toro. The Orange County Health Care Agency (“OCHCA”) oversees tank closure and ensures that the proper locations are sampled when tanks are removed. The RWQCB oversees site assessments, site remediation, and groundwater remediation associated with releases of hazardous substances from USTs. Based on the April 2003 Draft Final EBS, a total of 404 USTs were in use at the former air station. Of those USTs, 357 have been remediated and have received findings of No Further Action from the appropriate regulatory authority. Of a total of 39 ASTs used in support of the military mission at the former MCAS El Toro, 36 have been remediated and have received findings of No Further Action.

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The DTSC states that the former MCAS El Toro contains two hazardous waste management units (“HWMU”). The HWMUs include a hazardous waste container storage area and an open burn/open detonation (“OB/OD”) hazardous waste treatment unit. A hazardous waste facility permit (a RCRA-equivalent permit) to operate the hazardous waste container storage area designated as Building 673-T3 was issued in August 1993 by the DTSC. The permit allowed the storage of hazardous wastes for longer than 90-days in Building 673-T3. In March 1996, the closure certification report was accepted by the DTSC and the container storage area was considered closed.

Emergency Plans

The former MCAS El Toro (PA 51 and 30) is a potential emergency response staging area in the event of a large regional catastrophe (e.g. a severe earthquake) because of its capacity for processing and storing large quantities of cargo. The County of Orange, in coordination with all other local jurisdictions and emergency service providers in the County, is responsible for the preparation, maintenance, and implementation of emergency response plans and emergency evacuation plans for the County. The “Orange County Emergency Plan” is the official emergency plan for the County. That Plan is a basic reference and training document for emergency preparedness, response, recovery, mitigation, and provides the authority and basis for the development of more detailed departmental and functional standard operating procedures. It also incorporates the standardized emergency management system and national incident management system (“SEMS/NIMS”) established by the California Emergency Management Agency (“Cal EMA”). The SEMS/NIMS standardizes the response to emergencies involving multiple jurisdictions or agencies.

Wildland Fires

The Approved Wildlife Corridor Feature, and residential areas in the northeastern portion of PA 51 would be exposed to the highest level of fire risk from wildfires because these areas are adjacent to the NCCP Reserve which is currently defined as having high risk for wildland fires.

5.5.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- H-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- H-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- H-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.
- H-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

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- H-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard for people residing or working in the project area.
- H-6 For a project in the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.
- H-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- H-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to the urbanized areas or where residences are intermixed with wildlands.

Chapter 8, Impacts Found Not to Be Significant, substantiates the City's determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR), substantiates that the following impacts would be less than significant: H-1, H-2, H-3, H-5, H-6, and H-7. Therefore, these impacts will not be addressed in the following analysis. Impact areas H-4 and H-8 are discussed in detail below.

5.5.3 The 2011 Approved Project

Hazardous Materials and Wastes

The 2003 OCGP EIR analyzed the impacts of hazardous materials and wastes associated with the Approved Project Site. Several addenda have further refined uses within Existing PAs 30 and 51. The 2011 SEIR included revised analysis based on changes to the proposed residential and non-residential uses within Existing PAs 30 and 51. The combination of these documents and addenda comprise the 2011 Certified EIR which identified no significant impacts associated with the No Further Action IRP sites. The 2011 Certified EIR disclosed the following significant impacts of developing the Approved Project Site with the 2011 Approved Project:

- Construction activities involving demolition and possible substantial remodeling of existing structures in the Approved Project Site as the Approved Project Site develops could result in the disturbance of structures and soils containing asbestos-containing building materials (ACM) and lead-based paint.
- IRP Site 24 is located in the 6.1 Institutional, 1.9 Great Park, and 8.1 TTOD zoning districts. The site may be conveyed with temporary restrictions on use..
- Future uses of IRP Sites 3 and 5 may be potentially constrained by the implementation of institutional controls.
- IRP Site 16 (Crash Crew Pit No. 2) is located in the 1.9 Orange County Great Park zoning district. The site may be conveyed with temporary restrictions on use that are not appropriate for recreational land uses.

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Emergency Plans

The 2011 Certified EIR determined that the 2011 Approved Project would not be expected to interfere with emergency response and evacuation plans on the basis that other sites within Orange County are already designated as emergency staging areas and portions of the Approved Project Site would remain available for use by non-aviation emergency response equipment. Accordingly, the 2011 Certified EIR concluded that the while major portions of the Approved Project Site would be developed; sufficient acreage is expected to remain within preservation areas and the Great Park to allow for emergency staging operations. Therefore, residential and non-residential uses were found to not result in a significant impact related to emergency response and evacuation plans.

Wildland Fires

The 2011 Certified EIR concluded that the NCCP Reserve, Approved Wildlife Corridor Feature, and Recreational areas in the northeastern portion of Existing PA 51 would be exposed to the highest level of fire risk from wildland fires under the 2011 Approved Project, and that reuse of existing buildings require inspection for conformance to fire life safety code requirements. However, due to project design features included as part of the 2011 Approved Project, the 2011 Certified EIR concluded that the wildland fire hazard impacts would be less than significant.

5.5.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to the 2012 Modified Project which will help to reduce and avoid potential impacts related to hazards and hazardous materials:

- PPP 5-1 If any underground storage tanks (“USTs”) are encountered during site grading and excavation activities, they shall be removed in accordance with the existing standards and regulations of, and oversight by, the Orange County Health Care Agency (“OCHCA”), based on compliance authority granted through the California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Tank Regulations. The process for UST removal is detailed in the OCHCA’s “Underground Storage Tanks: The Basics.” Soil samples from areas where storage tanks have been removed or where soil contamination is suspected shall be analyzed for hydrocarbons including gasoline and diesel in accordance with procedures set forth by OCHCA. If hydrocarbons are identified in the soil, the appropriate response/remedial measures will be implemented as directed by OCHCA with support review from the Regional Water Quality Control Board until all specified requirements are satisfied and a Tank Closure Letter is issued. Any aboveground storage tank (“AST”) in existence at the commencement of site development shall be removed in accordance with all applicable regulations under the oversight of Orange County Fire Authority. Compliance requirements relative to the removal/closure of storage tanks are set forth through the California Health and Safety Code, Sections 25280 through 25299.
- PPP 5-2 During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations, Section 1532.1, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers

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exposed to lead. Lead-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision(s) of the California Health and Safety Code.

- PPP 5-3 Prior to approval of a conditional use permit, project applicants shall prepare a Fire Master Plan for submittal to the Orange County Fire Authority (“OCFA”) consistent with OCFA Guideline B-09 (Fire Master Plans for Commercial and Residential Development).
- PPP 5-4 Federal law requires compliance with Rule 29 of the Code of Federal Regulations (“CFR”) Part 1926. Prior to site demolition activities, building materials shall be carefully assessed for the presence of lead-based paint, and its removal, where necessary, must comply with state and federal regulations, including Occupational Safety and Health Administration (“OSHA”) 29 CFR Part 1926. The OSHA rule establishes standards for occupational health and environmental controls for lead exposure. The standard also includes requirements addressing exposure assessment, methods of compliance, respiratory protection, protective clothing and equipment, hygiene facilities and practices, medical surveillance, medical removal protection, employee information and training, signs, recordkeeping, and observation of monitoring. Furthermore, the requirements of California Code of Regulations, Title 17, Division 1, Chapter 8, identify procedures that must be followed for accreditation, certification, and work practices for lead-based paint and lead hazards. Section 36100 thereof specifically sets forth requirements for lead-based paint abatement in public and residential buildings.
- PPP 5-5 Prior to site demolition activities, building materials must be carefully assessed for the presence of asbestos-containing materials (“ACM”), and removal of this material, where necessary, must comply with state and federal regulations, including SCAQMD Rule 1403, which specifies work practices with the goal of minimizing asbestos emissions during building demolition and renovation activities, including the removal and associated disturbance of ACMs. The requirements for demolition and renovation activities include asbestos surveying; notification; ACM removal procedures and time schedules; ACM handling and cleanup procedures; and storage, disposal, and landfill disposal requirements for asbestos-containing waste materials.
- PPP 5-6 During site decommissioning and demolition activities, hazardous wastes must be managed in accordance with the requirements of Title 22, Division 4.5 of the California Code of Regulations. Title 22 sets forth the requirements with which hazardous-waste generators, transporters, and owners or operators of treatment, storage, or disposal facilities must comply. These regulations include the requirements for packaging, storage, labeling, reporting, and general management of hazardous waste prior to shipment. In addition, the regulations identify standards applicable to transporters of hazardous waste such as the requirements for transporting shipments of hazardous waste, manifesting, vehicle registration, and emergency accidental discharges during transportation.
- PPP 5-7 During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations, Section 1529, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practices by workers exposed to asbestos. Asbestos-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision(s) of the California Health and Safety Code.

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PPP 5-8 Evidence of soil and/or groundwater contamination (e.g., chemical odors, staining) unrelated to above/underground storage tank releases may be encountered during site development. The appropriate agency (e.g., OCHCA, DTSC, or the RWQCB) shall be notified if these conditions are encountered during construction or grading activities. With their oversight, an environmental site assessment shall be completed and a determination shall be made as to whether cleanup is required. Cleanup activities are required to be consistent with all applicable federal, State and local rules, regulations, and laws. A cleanup would not be considered complete until confirmatory samples of soil and/or groundwater reveal levels of contamination below the standards established by the oversight agency. Alternatively, a risk assessment may be prepared for the site to determine that there are no human or environmental risks associated with leaving contamination below specific levels in place. Construction in the impacted area shall not proceed until a “no further action” clearance letter or similar determination is issued by the oversight agency, or until a land use covenant is implemented.

Project Design Features

There are no project design features that apply to the 2012 Modified Project to help to reduce and avoid potential impacts related to hazards and hazardous materials.

Impact Threshold Analysis

The following analysis focuses on the potential public health and safety impacts associated with implementation of the 2012 Modified Project, as compared to the 2011 Approved Project. As detailed above, the information made available since the 2003 OCGP EIR relates to additional remedial actions, investigations and risk assessments supporting new regulatory “No Further Action” determinations, thereby reducing potential adverse impacts related to hazardous materials that may have existed at the time the 2003 OCGP EIR was prepared. As indicated below, the differences between the 2012 Modified Project and the 2011 Approved Project do not increase the potential impacts associated with hazardous materials because the property the Navy and regulators have determined to be suitable for residential use will not result in unacceptable exposures under any density scenario.

IMPACT 5.5-1: THE 2012 MODIFIED PROJECT WOULD BE LOCATED ON A SITE WHICH IS INCLUDED ON A LIST OF HAZARDOUS MATERIALS SITES COMPILED PURSUANT TO GOVERNMENT CODE SECTION 65962.5. [IMPACT H-4]

Impact Analysis: As is the case for the 2011 Approved Project, the 2012 Modified Project is located on a site which is included on the “Cortese List” of hazardous materials sites compiled pursuant to Government Code Section 65962.5. But, that fact does not in and of itself indicate that the 2012 Modified Project will create a significant hazard to the public or the environment. This discussion of Impact 5.5-1 evaluates the active IRP sites which have not yet received a formal “No Further Action” determination from the relevant regulatory agencies in order to determine whether the underlying conditions which have resulted in portions of the Proposed Project Site remaining on the Cortese List create a significant hazard to the public or environment. Those active sites are depicted in Figure 5.5-2.

Figure 5.5-1 depicts the zoning districts of the 2012 Modified Project in relation to the active IRP sites. The potential impacts of the active sites are analyzed in the discussion that follows. At each of these sites,

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substantial progress has been made toward achieving regulatory closure since the 2003 OCGP EIR was prepared.

IRP Sites 18 and 24 (VOC Contamination)

Remediation of contaminated soils at IRP Site 24 began in spring of 1999 and was completed in 2001. IRP Site 24 is located in zoning districts categorized as 6.1 Institutional (current), 1.9 Great Park (current), and 8.1 TTOD (proposed). The DON's human health risk assessment for Site 24 indicates that neither a recreational or institutional land use of the Proposed Project Site would result in a higher than acceptable risk. The Final ROD addressing Site 24 was issued by the DON in June 2002. The ROD selected a groundwater extraction and VOC treatment remedy addressing the TCE plume in the shallow groundwater unit. The groundwater remedy of extracting and treating VOC-impacted groundwater was implemented in 2006. A Final OPS Report for Site 24 was submitted on July 13, 2010. The USEPA concurred with the OPS Report on September 9, 2010. The DON intends to remediate the existing contamination of the shallow groundwater at Site 24 to an unrestricted standard. This remediation process will likely take a period of years to complete and during this time the DON has implemented institutional controls to limit access to groundwater and related activities to portions of Site 24. The Draft Final FOST #6 (DON, 2010) identifies institutional controls that the DON must implement and enforce in the form of land use or activity restrictions to be implemented for a portion of Site 24. These institutional controls are as follows:

- The DON will provide OCWD/IRWD access to the property for implementation of the Irvine Desalter Project. Lease of the property to the Applicant will contain provisions for continuing access, rights-of-way licenses, and easements as necessary for such remediation activities.
- The DON has informed the Applicant that a groundwater treatment system will be operating as prescribed and that the operator has the right to collect soil samples to confirm that the Applicant's operations have not released hazardous substances that could impact the treatment system.
- OCWD/IRWD will provide reasonable access to the DON, USEPA, and the DTSC to sample pretreated and treated groundwater as necessary.
- Land-use restrictions will be implemented through two legal instruments: 1) Environmental Restriction Covenant and Agreements addressing on-Station real property containing the IRP Site 24 groundwater plume and associated buffer zone and 2) quitclaim deeds between the transferee and the DON conveying on-Station real property containing the IRP Site 24 groundwater plume and associated buffer zone.
- OCHCA and IRWD will assure that permits are applied for and obtained for any new water wells in the on-Station VOC groundwater plume and will take necessary enforcement action to assure permits are obtained and complied with.
- The DON shall provide annually copies of permit applications and permits that it has received from OCHCA and IRWD during the previous year, beginning one year from the issuance of the OU1 and OU2A ROD, and ending when remediation has been completed.

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- The DON shall monitor and inspect the status of compliance with the land-use restrictions in the Environmental Restriction Covenant and Agreements and quitclaim deeds protecting on-Station extraction, injection, and monitoring wells, and associated piping and equipment concurrently with inspections of such engineering controls and equipment.
- If a violation of land-use restrictions is identified and/or documented by either the DON or the DTSC, the identifying entity will provide notification to all appropriate regulatory agencies within 10 working days.

IRP Site 18 is a plume of TCE that extends below the ground surface into the aquifer system located off-site of the former MCAS El Toro and outside of the Proposed Project Site. The institutional controls that the DON must implement and enforce for IRP Site 18 are as follows:

- Any person planning to construct a water well within the off-Station VOC plume must apply for and obtain a permit for construction.
- The DON will be provided with copies of any well permit applications received or permits issued within the geographic scope of the off-Station groundwater plume until remediation of the plume has been completed.
- The DON shall provide annually updated maps delineating the VOC groundwater plume until remediation has been completed.

The DON shall annually provide copies of permit applications and permits that it has received during the previous year, beginning one year from the issuance of the OU1 and OU2A ROD, and ending when remediation has been completed. Implementation of the institutional controls described above will reduce any potential exposures from VOC Sites 18 and 24 such that implementation of the 2012 Modified Project would have a less than significant impact. In recognition of the importance of the above-described institutional controls to the environmental remediation program and to human health and safety, this DSSEIR specifies compliance with them as mitigation measures, as did the MMRP for the 2011 Approved Project even though such compliance would otherwise be legally required (see Mitigation Measure HH 2 below).

IRP Sites 3 and 5 (Landfills)

Issues relating to IRP Sites 3 and 5 (landfills), including settling, are not expected to constrain proposed land uses within the Proposed Project Site. Possible exposure issues due to the potential presence of radioactive materials in the former landfills resulting from the disposal of radium paint residues were identified in the HRA report. As a result, the DON conducted site specific radiological investigations for the presence of radioactive materials and proceeded with the remedies described in the discussion that follows.

IRP Site 3 (Original Landfill) is located in the proposed zoning districts designated as 1.9 OCGP and 8.1 TTOD. The remediation for this site, consisting of the installation of a synthetic liner and implementation of institutional controls, has been completed. Due to the use of institutional controls in the form of land use controls, Site 3 and the associated buffer zone surrounding it will not be available for immediate reuse activity.

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IRP Site 5 (Perimeter Road Landfill) is located in the proposed zoning district designated as 1.4 Preservation. The remediation for this site, consisting of the installation of a synthetic liner and implementation of institutional controls, has been completed. Due to the use of institutional controls in the form of land use controls, Site 5 and the associated buffer zone surrounding it will not be available for immediate reuse activity. The former landfill area has been capped and can accommodate shallow-rooted plants. The proposed native grasses for the Relocated Wildlife Corridor Feature meet the "shallow-rooted" restriction. The Navy has published an Operations and Monitoring/Long Term Monitoring Plan which defines land use restrictions. Per this plan, the Relocated Wildlife Corridor Feature is an acceptable use of the capped landfill, and all land use restrictions associated with this area can, and will be followed in developing the Relocated Wildlife Corridor Feature. The planting restrictions apply only to the footprint of the capped landfill (less than 10 acres), and will not affect the overall flora and fauna of the Relocated Wildlife Corridor Feature.

Implementation of the institutional controls described above will reduce any potential exposures from the landfill Sites 3 and 5 such that the 2012 Modified Project would have a less than significant impact. In recognition of the importance of these institutional controls to the environmental remediation program, this DSSEIR specifies compliance with them as mitigation measures, as did the MMRP for the 2011 Approved Project, even though such compliance would otherwise be legally required (see Mitigation Measure HH-2 below).

IRP Site 8

IRP Site 8 is located in zoning district designations 6.1 Institutional (current) and 8.1 TTOD (proposed). As mentioned previously, information in the HRA Report indicates that IRP Site 8 may have received empty radium paint containers and debris from the demolition of the Radium Paint Shop at Building 296 for temporary storage awaiting disposal. The remediation of this site, consisting of excavation and proper disposal of shallow soil contamination, confirmation sampling, and site restoration, has been completed. The site is still awaiting official closure documentation. Once that documentation is received, the DON intends to convey the site as suitable for unrestricted use. Therefore, no significant impacts are anticipated to be associated with this site.

IRP Site 12

IRP Site 12 (Sludge Drying beds) is located in a zoning district designation 6.1 Institutional. Site 12 may have received sludge contaminated with Radium 226 from the sanitary sewage treatment plant due to the disposal of radium paint into the sanitary sewer system. Remediation at Site 12, consisting of excavation and proper disposal of shallow soil contamination, confirmation sampling, and site restoration, has been completed. The site is still awaiting official closure documentation. No significant impacts are anticipated to be associated with this site.

IRP Site 16

IRP Site 16 (Crash Crew Pit No. 2) is located in zoning district designation 1.9 Great Park. Because of the potential risks associated with the existing groundwater contamination, the DON may restrict use of the site until the groundwater is remediated to an appropriate risk level, at which time the site would be released for unrestricted use. This remediation process will likely take multiple years to complete, and during this time various institutional controls could be implemented to limit certain activities and unauthorized access to the site. Those institutional controls are likely to be similar to those specified for

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IRP Sites 18 and 24, described above. Implementation of those institutional controls will reduce any potential exposures from IRP Site 16 such that the Modified Project would have a less than significant impact. In recognition of the importance of these institutional controls to the environmental remediation program, this DSEIR specifies compliance with them as mitigation measures, as did the MMRP for the 2011 Approved Project, even though such compliance would otherwise be legally required (see Mitigation Measure HH-2 below).

Anomaly Area 3

Anomaly Area 3 is an approximately 13-acre site located in the northwest section of the Proposed Project Site near Pusan Way and adjacent to the Agua Chinon Wash in zoning district designation 8.1 TTOD. This site is considered a former refuse disposal area for construction debris. To date, the DON has conducted a geophysical investigation, exploratory trenching, radiological screening, installed monitoring wells and vadose zone wells and has started implementing its Proposed Plan. Preliminary results indicate the presence of buried metallic and construction debris, along with plastics, asbestos, pipes, wood and concrete. Radiological readings in the soil were at or below background levels. Some groundwater samples exceeded the maximum contaminant levels and are subject to further investigation. Soil levels for arsenic, total petroleum hydrocarbons, lead, and benzopyrene exceed industrial and residential PRG standards. Remedial actions under implementation at the site include limited site grading, minor waste consolidation, construction of a finger dyke, placement of riprap, implementation of institutional controls, and long-term monitoring. The proposed institutional controls put in place by the DON prohibit the following without prior approval from Navy regulators:

- Residential use of the sites and construction of hospitals for humans, schools for persons under 21 years of age, day care centers for children or any permanently occupied human habitation on the sites;
- Construction of facilities, structures, or appurtenances; excavation; or any other land-disturbing activity into or on the surface of the landfills that may involve adverse impacts upon the performance of the cap or affect the drainage and/or erosion controls;
- Construction of structures within 100 feet of the edge of the landfill until such time as monitoring demonstrates that contamination is not migrating;
- Planting deep-rooted plants that have the potential to interfere with the performance of the landfill cap in minimizing infiltration;
- Irrigating the surface of the landfill except when it is used for establishment, repair, and maintenance of vegetative cover required for effective performance of the cap;
- Alteration, disturbance, or removal of any component of a response action, including but not limited to a landfill cap (if constructed), monitoring wells, or survey monuments;
- Removal of or damage to security features or to monitoring equipment and associated pipelines and appurtenances.

Due to the use of institutional controls, Anomaly Area 3 and a possible buffer site surrounding it will not be available for immediate reuse activity. Implementation of the institutional controls described above

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will reduce any potential exposures from Anomaly Area 3 such that the 2012 Modified Project would have a less than significant impact. In recognition of the importance of these institutional controls to the environmental remediation program, this DSSEIR specifies compliance with them as mitigation measures, as did the MMRP for the 2011 Approved Project, even though such compliance would otherwise be legally required (see Mitigation Measure HH 2 below).

Jet Fuel Distribution System

The Norwalk Pipeline was used as a jet fuel distribution system in support of the military mission at the former MCAS El Toro. As detailed above, the entire pipeline was flushed and filled with an inert gas, and the majority of it was removed in 2006, with the exception of approximately 100 feet that was closed off and left in place under the Agua Chinon Wash. The presence of the pipeline that remains is considered a less than significant impact because it contains inert material.

Mitigation Program and Net Impact

Although the 2012 Modified Project is located on a site which is included on the “Cortese List” of hazardous materials sites compiled pursuant to Government Code Section 65962.5, as is the 2011 Approved Project, the active sites described above will not create a significant impact. As indicated above, the Navy has established institutional controls for many of the sites and this DSSEIR specifies compliance with those institutional controls as mitigation measures, as did the MMRP for the 2011 Approved Project, even though such compliance would otherwise be legally required (see Mitigation Measure HH 2 below). The conclusions about the potential impacts of the 2012 Modified Project set forth in this discussion of Impact 5.5-1 are the same conclusions as those in the 2011 Certified EIR about the 2011 Approved Project. Impacts due to the 2012 Modified Project being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 will be less than significant for the reasons set forth above.

IMPACT 5.5-2: *THE 2012 MODIFIED PROJECT COULD EXPOSE PEOPLE OR STRUCTURES TO A SIGNIFICANT RISK OF LOSS, INJURY OR DEATH INVOLVING WILDLAND FIRES, INCLUDING WHERE WILDLANDS ARE ADJACENT TO URBANIZED AREAS OR WHERE RESIDENCES ARE INTERMIXED WITH WILDLANDS. [THRESHOLD H-8]*

There is a potential impact resulting from exposure of people and structures to wildland fires. The Relocated Wildlife Corridor Feature and residential areas in the northeastern portion of Combined PA 51 will be exposed to the highest level of fire risk from wildfires because these areas are adjacent to the NCCP Reserve which is currently defined as having high risk for wildland fires under the updated Fire Hazard Map. Though not considered a high wildland fire hazard area, the Relocated Wildlife Corridor Feature will be subject to fuel modification requirements within its boundary, as described in PDF 10-1. Therefore, similar to the conclusions of the 2011 Certified EIR, the wildland fire hazard impacts under the 2012 Modified Project would remain less than significant.

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5.5.5 Cumulative Impacts

The assessment of potential cumulative impacts with regard to hazards and hazardous materials refers to the potential for on-site and off-site hazardous materials to have a cumulative effect on the health and well-being of project occupants. The hazardous materials study area considered for cumulative impacts consists of (1) the area that could be affected by 2012 Modified Project activities, and (2) the areas affected by other off-site projects where activities could directly or indirectly affect the presence or dispersion of hazardous materials onto the Proposed Project Site. In general, only projects occurring adjacent or very close to the Proposed Project Site are considered to potentially have a cumulative impact due to the limited impact area associated with releases of hazardous materials. A number of the areas adjacent to the Proposed Project Site have been developed since the 2003 OCGP EIR. In addition, substantial portions of the Proposed Project Site which may have posed cumulative impacts to 2012 Modified Project development have been remediated and released for unrestricted use. The DON process has addressed and remediated the potential instances between the site and adjacent areas where possible impacts were identified. Finally, the cumulative impacts of Sites 18 and 24 have been reduced by the remediation processes initiated in 2006. The 2012 Modified Project is consistent with a residential development and will involve the use of limited amounts of hazardous materials. In addition, the contribution of hazardous materials use and hazardous waste disposal with implementation of the project is minimal. With implementation the institutional restrictions imposed by the DON that are described above, the other PPPs described previously, and the mitigation measures imposed on the 2011 Approved Project, the cumulative impact of hazardous materials releases or emissions from the 2012 Modified Project and past, present, and reasonably foreseeable projects in the vicinity will be less than significant.

5.5.6 Applicable Mitigation Measures from the 2011 Certified EIR

Each mitigation measure specified for implementation in the 2011 Certified EIR and associated MMRP is set forth below. All hazards and hazardous materials Mitigation Measures are the same for the 2012 Modified Project as for the 2011 Approved Project. This DSSEIR proposes to make two minor modifications to Mitigation Measure HH-2 and HH-3 adopted by the City for the 2011 Approved Project. The modification to HH-2 is being made to update the reference to this DSSEIR. The modification is being made to HH-3 is to note that the high fire hazard maps are occasionally updated and does not affect the substance of the mitigation measure. Modifications to the original mitigation measure are identified in ~~strikeout~~ text to indicate deletions and underlined to signify additions.

HH-1 For any remaining structures known to contain ACMs that will be renovated and/or demolished, HF shall ensure that all asbestos is removed and disposed of in accordance with applicable federal, state and local regulatory requirements.

Prior to occupancy, renovation or demolition of any remaining structures constructed before October 1988, and in which the presence of ACMs is unknown, an asbestos survey shall be conducted by Heritage Fields. This requirement can be waived if an architect or project engineer responsible for the construction of the structure or an accredited asbestos inspector signs a statement that no ACM was specified as a building material, and to the best of their knowledge, no ACMs were used as a building material. If the asbestos survey identifies ACMs, the applicant shall ensure that all asbestos is removed and disposed of in accordance with applicable federal, state and local regulatory requirements.

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Any existing structures in which ACMs have been identified and which will remain in use shall be addressed in an Operation and Maintenance Plan and must be managed in accordance with applicable laws.

Any renovation and/or LBP abatement activities on residential units at former MCAS El Toro, shall be conducted in accordance with all applicable federal, state and local regulatory requirements.

- HH-2 The portions of the Proposed Project Site located on the active Installation Restoration Program (“IRP”) Sites listed in Table 5.54-2, Action Required IRP Sites and Zoning – 2012 Modified Project, of the DSSEIR for the 2012 Modified Project shall be used only in accordance with the requirements of the applicable Final FOST or Finding of Suitability to Lease, including in strict compliance with all lease restrictions (such as restrictions against soil or groundwater disturbance without approval from the Navy and regulators) and all institutional controls (such as restrictions against disturbing the integrity of physical remedial components like caps or groundwater treatment systems and other restrictions imposed by the Navy).
- HH-3 The Community Development Department, in coordination with the Orange County Fire Authority (“OCFA”), will be responsible for review of all development plans, which would include evaluation of very high fire severity zones, special fire protection plans, and any requirements for fuel modification zones. Projects potentially impacted by wildland fire hazards will be subject to OCFA Guidelines for “Development Within and Exclusion from Very High Fire Severity Zones” and “Fuel Modification Plans and Maintenance.” Additionally, all demolition, renovation, and construction activities in the project area will be subject to review by OCFA to ensure adequate fire protection, water flow, emergency access, design features, etc., according to the standards of the Uniform Fire Code and the California Fire Code. Due to the implementation of these standard fire protection procedures and based on the revised Fire Hazard Maps, the 2012 Modified Project is not anticipated to result in significant short- or long-term adverse impacts related to fire hazards.
- HH-4 Prior to issuance of occupancy permits of any existing structure at the former MCAS El Toro, a fire life-safety evaluation of the structure including recommendations for improvements required for compliance with current Building Codes for use of existing structures adopted by the City and plans for any required improvements shall be submitted to the Chief Building Official for review and approval.
- HH-5 Prior to the issuance of a grading permit, the applicant shall prepare and the Director of Community Development shall approve a protocol plan (including but not limited to worker training, health and safety precautions, additional testing requirements, and emergency notification procedures) in the event that unknown hazardous materials are discovered during grading, construction, and/or related development activities. Additionally, said protocol plan will be revised should the discovery of previously unknown hazardous materials be made during any of the above mentioned development activities. The applicant and/or property owner that discovers contamination due to past military operations not previously identified by the DON shall be responsible for notifying the DON, appropriate regulatory agencies, and the Director of Community Development of the City in a timely manner. Additionally, said Protocol Plan shall be revised should the discovery of previously unknown hazardous materials be made during any of the above mentioned development activities.

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- HH-6 The City shall develop and maintain the location and status, as well as other pertinent information, of all monitoring wells on the former MCAS El Toro in a geographic information systems database (“GIS”). The City will review all permit applications on the former air station for monitoring well locations that may be affected by a permit, and require applicants to maintain appropriate access. Access to monitoring wells will be limited to authorized personnel.

5.5.7 Level of Significance Before Additional Mitigation

Upon continued implementation of regulatory measures, the PPPs identified above and the mitigation measures adopted in the MMRP for the 2011 Approved Project, impacts associated with the 2012 Modified Project would be less than significant without the additional mitigation.

5.5.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are required because the mitigation measures identified in the 2011 Certified EIR and associated MMRP would reduce hazards and hazardous materials impacts of the 2012 Modified Project to a level of less than significant.

5.5.9 Level of Significance After Additional Mitigation

With implementation of the existing regulations, PPPs and mitigation measures outlined above from the 2011 Approved Project, potential impacts of the 2012 Modified Project associated with hazards and hazardous materials would be reduced to a level that is less than significant. Therefore, no significant impacts relating to hazards and hazardous materials have been identified.

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5.4 GREENHOUSE GAS EMISSIONS

This section of the DSSEIR compares the impacts of the 2012 Modified Project's greenhouse gas ("GHG") emissions to the impacts of the 2011 Approved Project's GHG emissions. The analysis in this section is based, in part, on the Greenhouse Gas and Climate Change Technical Report prepared by ENVIRON International Corporation (May 2012) and included in Appendix D to this DSSEIR.

In addition, the analysis in this section is based in part on the following studies:

- *Final Statement of Reasons for Regulatory Action, Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97*, California Natural Resources Agency, December 2009¹
- *CEQA and Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, California Air Pollution Control Officers Association ("CAPCOA"), January 2008²
- *Climate Change Scoping Plan*, California Air Resources Board ("CARB"), December 2008^{3,4}
- *Compass Blueprint 2% Strategy Opportunity Areas Maps*, Southern California Association of Governments ("SCAG"), 2008⁵
- *The California Environmental Quality Act – Addressing Global Warming Impacts at the Local Agency Level*, Office of the California Attorney General, 2008⁶
- *Technical Advisory, CEQA and Climate Change – Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*, Governor's Office Of Planning And Research, June 2008⁷

5.4.1 Environmental Setting

Greenhouse Gases and Climate Change

Climate change is a term that refers to the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The climate system is interactive, consisting of five major components: the atmosphere, the hydrosphere (ocean, rivers, and lakes), the cryosphere (sea ice, ice sheets, and glaciers), the land surface, and the biosphere (flora and fauna). The atmosphere is the most unstable and rapidly changing part of the system. It is made up of 78.1 percent nitrogen ("N₂"), 20.9 percent oxygen ("O₂"), and 0.93 percent argon ("Ar"). These gases have only limited interaction with the

¹ This document can be found at: <http://www.ceres.ca.gov/ceqa/guidelines/>

² This document can be found at: <http://www.capcoa.org/>

³ The San Francisco County Superior Court has recently issued a Judgment in *Association of Irrigated Residents v. California Air Resources Board*, San Francisco County Superior Court Case No. CPF-09-509562 that enjoins implementation of the Scoping Plan's cap and trade program. A copy of this Judgment can be found at: <http://stream.loe.org/images/110520/final%20writ-1.pdf>.

⁴ This document can be found at: <http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>

⁵ This document can be found at: <http://www.compassblueprint.org/>

⁶ This document can be found at: <http://ag.ca.gov/globalwarming/>

⁷ This document can be found at: <http://ag.ca.gov/globalwarming/>

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incoming solar radiation and do not interact with infrared (long-wave) radiation emitted by the Earth. However, there are a number of trace gases, such as carbon dioxide ("CO₂"), methane ("CH₄"), nitrous oxide ("N₂O"), and ozone ("O₃"), that absorb and emit infrared radiation and therefore have an effect on climate. These are GHGs, and while they comprise less than 0.1 percent of the total volume mixing ratio in dry air, they play an essential role in influencing climate (IPCC 2001).

Non-CO₂ GHGs are those listed in the Kyoto Protocol⁸ (CH₄, N₂O, hydrofluorocarbons ["HFC"], perfluorocarbons ["PFC"], and sulfur hexafluoride ["SF₆"]) and those listed under the Montreal Protocol and its Amendments⁹ (chlorofluorocarbons ["CFC"], hydrochlorofluorocarbons ["HCFC"], and halons). Table 5.4-1, *Greenhouse Gases and Their Relative Global Warming Potential Compared to CO₂*, lists a selection of some of the GHGs and their relative global warming potentials ("GWP") as compared to CO₂. Although not included in this table, water vapor ("H₂O") is the strongest GHG, but is also the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant in the atmosphere (IPCC 2001). The major GHGs are briefly described below.

Carbon dioxide (CO₂) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH₄) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Nitrous oxide (N₂O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

⁸ Kyoto Protocol: Established by the United Nations Framework Convention on Climate Change (UNFCCC) and signed by more than 160 countries (excluding the United States) stating that they commit to reduce their GHG emissions by 55 percent or engage in emissions trading.

⁹ Montreal Protocol and Amendments: International Treaty signed in 1987 and subsequently amended in 1990 and 1992. Stipulates that the production and consumption of compounds that deplete ozone in the stratosphere (CFC, halons, carbon tetrachloride, and methyl chloroform) are to be phased out by 2000 (2005 for methyl chloroform).

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*Table 5.4-1
Greenhouse Gases and Their Relative Global Warming Potential
Compared to CO₂*

<i>GHG</i>	<i>Atmospheric Lifetime (years)</i>	<i>Global Warming Potential Relative to CO₂¹</i>
Carbon Dioxide (CO ₂)	50 to 200	1
Methane (CH ₄) ²	12 (±3)	21
Nitrous Oxide (N ₂ O)	120	310
Hydrofluorocarbons:		
HFC-23	264	11,700
HFC-32	5.6	650
HFC-125	32.6	2,800
HFC-134a	14.6	1,300
HFC-143a	48.3	3,800
HFC-152a	1.5	140
HFC-227ea	36.5	2,900
HFC-236fa	209	6,300
HFC-4310mee	17.1	1,300
Perfluoromethane: CF ₄	50,000	6,500
Perfluoroethane: C ₂ F ₆	10,000	9,200
Perfluorobutane: C ₄ F ₁₀	2,600	7,000
Perfluoro-2-methylpentane: C ₆ F ₁₄	3,200	7,400
Sulfur Hexafluoride (SF ₆)	3,200	23,900

Source: USEPA

¹ Based on 100-Year Time Horizon of the Global Warming Potential (GWP) of the air pollutant relative to CO₂.

² The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO₂ is not included.

Fluorinated gases are synthetic, strong greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases.

- **Chlorofluorocarbons (“CFCs”)** are greenhouse gases covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.
- **Perfluorocarbons (“PFCs”)** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [“CF₄”] and perfluoroethane [“C₂F₆”]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

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- **Sulfur Hexafluoride** (“**SF₆**”) is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF₆ is a strong greenhouse gas used primarily in electrical transmission and distribution systems as an insulator.
- **Hydrochlorofluorocarbons** (“**HCFCs**”) contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also greenhouse gases.
- **Hydrofluorocarbons** (“**HFCs**”) contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong greenhouse gases (USEPA 2008a).

California's GHG Sources and Relative Contribution

California is the second largest emitter of GHG in the United States, only surpassed by Texas, and the tenth largest GHG emitter in the world (CEC 2005). However, because of more stringent air emission regulations, in 2001 California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO₂ emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services) (CEC 2006). In 2004, California produced 492 million metric tons (“MMTons”) of CO₂-equivalent (“CO₂e”) GHG emissions,¹⁰ of which 81 percent were CO₂ from the combustion of fossil fuels, 2.8 percent were from other sources of CO₂, 5.7 percent were from methane, and 6.8 percent were from N₂O (CEC 2006). The remaining 2.9 percent of GHG emissions were from High Global Warming Potential gases, which include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (CEC 2006).

CO₂ emissions from human activities make up 84 percent of the total GHG emissions (CEC 2006). California's transportation sector is the single largest generator of GHG emissions, producing 40.7 percent of the state's total emissions (CEC 2006). Electricity consumption is the second largest source, comprising 22.2 percent. While out-of-state electricity generation comprises 22 to 32 percent of California's total electricity supply, it contributes 39 to 57 percent of the GHG emissions associated with electricity consumption in the state (CEC 2006). Industrial activities are California's third largest source of GHG emissions, comprising 20.5 percent of state's total emissions (CEC 2006). Other major sources of GHG emissions include mineral production, waste combustion and land use, and forestry changes. Agriculture, forestry, commercial, and residential activities comprise the balance of California's greenhouse gas emissions (CEC 2006).

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHG in the atmosphere remained relatively constant (IPCC 2007). During the 20th century, however, scientists observed a rapid change in the climate and climate change pollutants that are attributable to human activities. The amount

¹⁰ CO₂-equivalence is used to show the relative potential that different GHG have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

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of CO₂ has increased by more than 35 percent since pre-industrial times, and has increased at an average rate of 1.4 parts per million (“ppm”) per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006).

Climate-change scenarios are affected by varying degrees of uncertainty (IPCC 2007). The Intergovernmental Panel on Climate Change’s (“IPCC”) 2007 *IPCC Fourth Assessment Report* projects that the range of global mean temperature increase from 1990 to 2100, under different climate-change scenarios, will range from 1.4 to 5.8 °C (2.5 to 10.4°F). In the past, gradual changes in the earth’s temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic timeframe but within a human lifetime (IPCC 2007).

Potential Climate Change Impacts for California

Climate change is not a local environmental impact; it is a global impact.¹¹ Unlike criteria pollutants, CO₂ emissions cannot be attributed to a direct health effect. However, human-caused increases in GHG have been shown to be highly correlated with increases in the surface and ocean temperatures on Earth (IPCC 2007). What is not clear is the extent of the impact on environmental systems.

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth’s temperature are also hard to predict. Likewise, there are varying degrees of uncertainty in environmental impact scenarios. Because of this uncertainty, the IPCC uses five different confidence levels to quantify climate change impacts on the environment: Very High Confidence (95 percent or greater), High Confidence (67 to 95 percent), Medium Confidence (33 to 67 percent), Low Confidence (5 to 33 percent), and Very Low Confidence (5 percent or less).

In California and western North America, 1) observations in the climate have showed a trend toward warmer winter and spring temperatures, 2) a smaller fraction of precipitation is falling as snow, 3) there is a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones, 4) there is an advance snowmelt of 5 to 30 days earlier in the springs, and 5) there is a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). According to the California Climate Action Team (“CAT”), even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.4-1), and the inertia of the Earth’s climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered to be unavoidable.

CAT and the California Environmental Protection Agency (“Cal/EPA”) use the results from the recent analysis of global climate change impacts for California under three IPCC scenarios: lower emissions (“B1”), medium-high emissions (“A2”), and high emissions (“A1F1”); each is associated with an increasing rise in average global surface temperatures. According to the California Energy Commission (“CEC”) in its 2006 report, *Our Changing Climate, Assessing the Risks to California*, global climate change risks to California include public health impacts (poor air quality made worse and more severe heat), water resources impacts (decreasing Sierra Nevada snow pack, challenges in securing adequate

¹¹ See Final Statement of Reasons, pp. 11-12; Bay Area Air Quality Management District Air Quality Guidelines, p. 2-4.

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water supply, potential reduction in hydropower, and loss of winter recreation), agricultural impacts (increasing temperatures, increasing threats from pests and pathogens, expanded ranges of agricultural weeds, and declining productivity), coast sea level impacts (rising coastal sea levels, increasing coastal floods, and shrinking beaches), forest and biological resource impacts (increasing wildfires, increasing threats from pest and pathogens, declining forest productivity, and shifting vegetation and species distribution), and electricity impacts (increased energy demand).

Regulatory Setting

Regulation of GHG Emissions on a National Level

Currently there are no adopted regulations to combat global climate change on a national level. However, recent statutory authority has been granted to the United States Environmental Protection Agency ("USEPA") that may change the voluntary approach taken under our current administration to address this issue. On April 2, 2007, the United States Supreme Court ruled that the USEPA has the authority to regulate CO₂ emissions under the Federal Clean Air Act. Consequently, the regulation of GHG emissions by the USEPA with regard to global climate change on a national level is anticipated to be forthcoming.

After a thorough examination of the scientific evidence and careful consideration of public comments, the USEPA announced on December 7, 2009 that GHG emissions threaten the public health and welfare of the American people. USEPA also finds that GHG emissions from on-road vehicles contribute to that threat. USEPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but rather allow USEPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.

USEPA's endangerment finding covers emissions of six key greenhouse gases – carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride – that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world.

Regulation of GHG Emissions on a State Level

Assembly Bill 32 ("AB 32"), the Global Warming Solutions Act, was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the first tier of emissions reduction targets established in Executive Order S-3-05, signed on June 1, 2005. Executive Order S-3-05 requires the state's global warming emissions to be reduced to 1990 levels by the year 2020 and by 80 percent of 1990 levels by the year 2050. AB 32 sets a 2020 target at the emissions levels that were generated in the state in year 1990. It is projected that GHG emissions in California by 2020 will be approximately 596 MMTons of CO_{2e} (CARB 2008). In December 2007, CARB approved a 2020 emissions limit of 427 MMTons (471 million tons) of CO_{2e} for the state (CARB 2008). The 2020 target requires emissions reductions of 169 MMTons, 28.5 percent of the projected emissions compared to business-as-usual ("BAU") in year 2020 (i.e., 28.5 percent of 596 MMTons) (CARB 2008). CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical practice in 2002 through 2004.

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In order to effectively implement the cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor global warming emissions levels for large stationary sources that generate more than 25,000 metric tons (“MTons”) per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012. The Climate Action Registry Reporting Online Tool was established through the Climate Action Registry to track GHG emissions. In June 2008, CARB released a draft of the *Climate Change Scoping Plan*, which was revised in October 2008. The final Scoping Plan was adopted by CARB on December 11, 2008. Key elements of CARB’s GHG reduction plan are:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a mix of 33 percent for energy generation from renewable sources;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system for large stationary sources (however, as of the date of this DSEIR, implementation of this cap-and-trade portion of the Scoping Plan has been enjoined);¹²
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to state laws and policies, including California’s clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating target fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state’s long-term commitment to AB 32 implementation.

Table 5.4-2, *Scoping Plan Greenhouse Gas Reduction Measures and Reductions Toward 2020 Targets*, shows the proposed reductions from regulations and programs outlined in the Scoping Plan. While local government operations were not accounted for in achieving the 2020 emissions reduction, CARB estimates that land use changes implemented by local governments that integrate jobs, housing, and services are estimated to result in a reduction of 5 MMTons of CO₂e, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local government plays in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today’s levels by 2020 to ensure that municipal and community-wide emissions match the state’s reduction target. Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer vehicle miles traveled. According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles travelled by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 MMTons of CO₂e (or approximately 1.2 percent of the GHG reduction target).

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In addition to the requirements under AB 32 to address GHG emission and global climate change in general plans and CEQA documents, Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines for addressing global warming emissions and mitigating project-generated GHG emissions. OPR transmitted the proposed guidelines to the California Natural Resources Agency ("CNRA") and the guidelines were adopted on December 30, 2009. The amended CEQA Guidelines became effective on March 18, 2010.

*Table 5.4-2
CARB Scoping Plan Greenhouse Gas Reduction Measures and
Reductions Toward 2020 Target*

<i>Recommended Reduction Measures</i>	<i>Reductions Counted toward 2020 Target of 169 MMT CO_{2e}</i>	<i>Percentage of Statewide 2020 Target</i>
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets ¹	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	146.7	87%
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	27.3	16%
Total Reductions Counted Towards 2020 Target	174	100%
Other Recommended Measures – Not Counted Towards 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations	To Be Determined	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted Towards 2020 Target	42.8	NA

Source: CARB 2008. Note: the percentages in the right-hand column add up to more than 100 percent because the emissions reduction goal is 169 MMTons and the Scoping Plan identifies 174 MMTons of emissions reductions strategies.

MMTCO_{2e}: million metric tons of CO_{2e}

¹ Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target.

² According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles traveled by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 MMTons of CO_{2e} (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 target.

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The new CEQA Guidelines concerning GHG emissions do not include or recommend any particular threshold of significance; instead, they leave that decision to the discretion of the lead agency. However, with respect to adopting thresholds of significance, newly added CEQA Guidelines section 15064.7 subdivision (c) provides: “[A] lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.” The new CEQA Guidelines also do not suggest or recommend the use of any specific GHG emission mitigation measures. Instead, newly added CEQA Guidelines section 15126.4 subdivision (c) provides that lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions.

Among other things, CNRA noted in its Public Notice for these changes to the CEQA Guidelines that the impacts of GHG emissions should be considered in the context of a cumulative impact, rather than a project impact. The Public Notice states:

“While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project’s incremental contribution of greenhouse gas emissions is cumulatively considerable.”

Executive Order S-03-05

In summary, current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB-32 and Executive Order S-03-05. AB 32 establishes a goal of reaching 1990 levels by 2020 and describes a process for achieving that goal. Executive Order S-03-05 sets a goal for the following for reduction of GHG emissions:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050.

Energy Conservation Standards

Energy Conservation Standards for new residential and non-residential buildings were adopted by California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2008 (Title 24, Part 6 of the California Code of Regulations ["CCR"]).¹³ Title 24 requires the design of building shells and building components to conserve energy (see PDF 4-8 below). The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the California Energy Commission adopted the 2013 Energy Efficiency Standards, which take effect on January 1, 2014, and which are 25 percent more efficient than the 2008 Title 24 standards for residential construction and 30 percent more efficient for nonresidential construction. The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally-regulated appliances and non-federally regulated appliances. While these regulations are

¹³ Although new building energy efficiency standards were adopted in April 2008, these standards did not go into effect until 2009.

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now often viewed as “business-as-usual,” they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

On July 17, 2008, the California Building Standards Commission adopted the nation’s first green building standards. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). The green building standards that became mandatory in the 2010 edition of the Code established voluntary standards on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011.

Renewable Power Requirements

A major component of California’s Renewable Energy Program is the renewable portfolio standard (“RPS”) established under Senate Bills (“SBs”) 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity are required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010.¹⁴ CARB has now approved an even higher goal of 33 percent by 2020. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered “carbon neutral” (ENVIRON 2012).

Vehicle Emission Standards/Improved Fuel Economy

Vehicle GHG emission standards were enacted under AB 1493 (“Pavley I”) and the Low Carbon Fuel Standard (“LCFS”). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light duty auto – medium duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California’s transportation fuels by 2015 and a reduction of at least 10 percent by 2020.¹⁵

Regulation of GHG Emissions on a Regional Level

In 2008, SB 375 was adopted to connect the GHG emissions reductions targets in the Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excluding emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled and vehicle trips. Specifically, SB 375 requires CARB to establish GHG emissions reduction targets for each of the 18 regions in California managed by a metropolitan planning organization (“MPO”). SCAG is the MPO for the southern California region, which includes the counties of Los Angeles, Orange, San Bernardino County, Riverside, Ventura, and Imperial.

The GHG emissions reduction targets for each region were established by CARB in September 2010, and each MPO, under SB 375, is now required to prepare a Sustainable Communities Strategy (“SCS”) in its

¹⁴ 2002 Senate Bill 1078 and 2006 Senate Bill 107.

¹⁵ CARB’s user guide for the Pavley I + Low Carbon Fuel Standard Postprocessor provides more detail. Available at: <http://www.arb.ca.gov/cc/sb375/tools/pavleylcfscs-userguide.pdf>, accessed May 2012.

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Regional Transportation Plan that achieves the established target. On April 4, 2012, the Regional Council of SCAG adopted its 2012-2035 Regional Transportation Plan, including its SCS. In general, the SCS is intended to set forth a development pattern for the region, which, when integrated with the region's transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS is meant to provide individual jurisdictions with growth strategies that, when taken together, achieve the regional GHG emissions reduction targets. However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; but it provides incentives to governments and developers if plans and zoning are consistent. If the SCS is unable to achieve the regional GHG emissions reduction targets, the MPO is required to prepare an alternative planning strategy that shows how the GHG emissions reduction target could be achieved through alternative development patterns, infrastructure, and/or transportation measures.

5.4.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Neither SCAQMD nor the City has adopted a significance threshold for the GHG emissions from residential/commercial projects. Consequently, the City has determined for this DSSEIR, pursuant to the discretion afforded by CEQA Guidelines section 15064.4(a) and (b), respectively, to quantify the GHG emissions from the 2012 Modified Project and the 2011 Approved Project based on the methodologies proposed by SCAQMD. In addition, as outlined below, the City has determined to assess the significance of the 2012 Modified Project's GHG emissions using the SCAQMD's draft target efficiency threshold of 4.8 MTons per service population ("MTons/SP") per year, and to analyze the 2012 Modified Project's consistency with plans, policies and regulations adopted for the purpose of reducing GHG emissions.

South Coast Air Quality Management District

On December 5, 2008, SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency. As to all projects where SCAQMD is not the lead agency, the Board has only adopted thresholds for industrial (stationary source) projects, and has not yet adopted CEQA GHG thresholds for new residential/commercial development projects.¹⁶ To achieve a policy objective of capturing 90 percent of GHG emissions from new residential/commercial development projects and implement a "fair share" approach to reducing emission increases from each sector, SCAQMD staff has proposed combining performance standards and screening thresholds. To assist interested parties in assessing the significance of GHG emissions from new residential/commercial development projects under CEQA, SCAQMD has been working on developing thresholds together with its GHG CEQA Significance Thresholds Working Group.

¹⁶ The current proposed threshold criteria and adopted industrial permitted project threshold criteria can be found on SCAQMD's website at: <http://www.aqmd.gov/ceqa/handbook/GHG/GHG.html>

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At this time, the SCAQMD has not adopted any significance thresholds for new residential/commercial development projects. However, over the last few years SCAQMD has proposed several draft thresholds. According to a presentation given at the September 28, 2010 GHG CEQA Significance Working Group meeting, the last Working Group meeting prior to the date that the ENVIRON GHG Technical Report was prepared for the 2012 Modified Project, SCAQMD proposed a draft threshold for 2020 of 4.8 MTons of CO₂e per "service population" per year for mixed use developments such as the 2012 Modified Project. For the 2012 Modified Project, the service population is defined as the sum of the residential population and employees since no adult students are included in the 2012 Modified Project. A development's GHG emissions are divided by the service population to yield a GHG efficiency metric that is presented in terms of "metric tons of CO₂e per service population per year" (MT/SP/YR) figure. In other words, the most recently proposed SCAQMD threshold requires dividing a development project's total GHG emissions by its total service population; if the resulting number exceeds 4.8 MTons of CO₂e per service person per year, the development's GHG emissions would be considered significant.

City of Irvine

The City adopted the California Green Building Codes (CalGreen Title 24 part 11) which requires new buildings to incorporate several mandatory measures aimed at reducing the environmental impact of buildings¹⁷. This includes features that will reduce GHG emissions through enhanced energy and water efficiency.

On July 8, 2008, the City adopted an energy plan which has four goals.¹⁸ The first goal is to achieve 100% community participation in its energy plan. The second goal is to improve building energy use by 30%. The third goal is to transition to renewable energy. The final goal is to reduce GHG emissions to 1990 levels by 2020.

5.4.3 The 2011 Approved Project

The 2011 Certified EIR determined that the 2011 Approved Project would result in both one-time and annual GHG emissions associated with the construction and operation of the development. However, the 2011 Certified EIR found that the 2011 Approved Project would not result in significant impacts related to GHG emissions.

5.4.4 Environmental Impacts of the 2012 Modified Project

Modeling Methodology

The California Emissions Estimator Model ("CalEEMod") version 2011.1.1 was used to assist in quantifying the GHG emissions inventories, including both direct and indirect emissions sources, for the 2011 Approved Project and the 2012 Modified Project. These inventories include the following emission sources (see Appendix D for additional details regarding modeling methodology and assumptions):

- Construction: one-time emissions associated with construction equipment, construction-related vehicle trips, and off-gas emissions from painting and paving. There are four major construction

¹⁷ <http://www.cityofirvine.us/programs/green-building/>

¹⁸ <http://www.cityofirvine.us/assets/downloads/CityofIrvineEnergyPlan20080624.pdf>

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phases for an urban redevelopment: demolition, site preparation, grading, and building construction. The building construction phase can be broken down into three subphases: building construction, architectural painting, and asphalt paving. GHG emissions from these construction phases are largely attributable to fuel use from construction equipment and worker commuting. Emissions from off-road equipment for the 2012 Modified Project would be approximately the same as estimated for the 2011 Approved Project, as the amount of land that would need to be graded and paved would be similar, and most off-road equipment used during construction is associated with grading and paving. Offsite emissions associated with worker transportation and materials transportation to the site may be higher, due to the larger amount of vertical construction¹⁹ proposed for the 2012 Modified Project. The 2012 Modified Project has the potential to result in a longer vertical construction period, but this potential increase in offsite construction transportation emissions is not expected to change the analysis herein. The construction emissions would be approximately the same for the 2012 Modified Project as for the 2011 Approved Project, since merely changing the type of certain of the buildings and increasing density primarily through vertical construction would result in little additional construction equipment at the site, and the amount of time and resources required for site preparation and grading is assumed to remain the same. The off-road equipment associated with the construction of nonresidential and residential land uses would not be meaningfully different. Further, although the 2012 Modified Project incorporates the TCA Property into the boundaries of Combined PA 51, the addition of this acreage is not expected to meaningfully change the total construction emission estimates since the incremental increase in area for construction is small. The emissions have been adjusted from the CalEEMod output to account for the 33 percent reduction attributable to overestimation of load factors as indicated by CARB, as appropriate. To be conservative, no specific mitigation measures related to GHG emissions associated with construction were assumed in this model. However, it should be noted that mitigation measures such as requiring the use of newer model engines and higher Tier (i.e., lower emitting) off-road equipment would reduce the GHG emissions. The exceptions are the use of compressed natural gas vehicles, which could increase the GHG emissions from off-road vehicles slightly, and the use of diesel particulate filters, which have a small energy penalty associated with them.

- **Vegetation Changes:** one-time net carbon sequestration from approximately 18,000 new trees planted on the Proposed Project Site in addition to those incorporated into the 2011 Approved Project.
- **Area Sources:** annual emissions associated with landscape maintenance-related fuel combustion sources, such as lawn mowers, and from natural gas fireplaces. No substantial direct GHG emissions would result from consumer products and architectural coating. Based on information provided by the Applicant, 4,350 dwelling units were assumed to contain natural gas fireplaces for the 2011 Approved Project. For the 2012 Modified Project, 8,444 dwelling units were assumed to contain natural gas fireplaces without the optional conversion, and 9,511 dwelling units were assumed to contain natural gas fireplaces with the optional conversion.²⁰ Consistent with the assumptions for the 2011 Approved Project, the landscape-related emissions for the 2012 Modified Project were reduced by 28 percent from the CalEEMod default to account for the

¹⁹ In the context of this evaluation, “vertical construction” refers to the construction of the building structure as opposed to “horizontal construction” which is related to activities such as demolition and site preparation.

²⁰ Electrical fireplaces, if incorporated instead of natural gas fireplaces, would result in decreased GHG emissions compared to a similar sized natural gas fireplace.

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lower amount of landscaped areas in the 2012 Modified Project as compared to those assumed in CalEEMod.

- **Building Energy Use:** annual emissions associated with energy use (electricity and natural gas) in residential and non-residential buildings. These emissions have been calculated using a Southern California Edison (SCE) emission factor that accounts for the 33 percent renewable portfolio standard (RPS) required by 2020. Building energy intensity was calibrated to account for updates in building energy efficiency requirements since the 2001 Title 24 (California Building Code) standards (e.g., 2008 Building and Energy Efficiency Standards). The 2012 Modified Project's GHG emissions also reflect the Applicant's commitment to build homes and non-residential buildings that are 15 percent more energy efficient than the standards set forth in the 2008 California Building and Energy Efficiency Standards (California Code of Regulations, Title 24, Part 6). (It should be noted, however, that if the Energy Commission's 2013 Energy Efficiency Standards, to take effect on January 1, 2014, were incorporated into this analysis, the estimated emissions would be lower.)
- **Water Supply, Treatment, and Distribution:** annual emissions associated with energy used to pump, convey, treat, deliver, and re-treat water (embodied energy of water). Professionally managed landscaped areas, commercial landscaping, and residential landscaping that is under the control of a home owner's association will utilize recycled water. Wastewater treatment plant emissions are based on 100 percent aerobic, consistent with the types of treatment utilized in the Irvine Ranch Water District ("IRWD") plants.
- **Solid waste:** annual emissions associated with the anaerobic breakdown of materials from residential and commercial waste streams. CalEEMod defaults were used since they represent waste disposed to the landfill instead of waste generated, as quantified in Section 5.12, *Utilities and Service Systems*, of this DSSEIR. GHG emissions associated with other waste diversion are not considered, because it is generally assumed that these diversions do not result in any appreciable amounts of GHG emissions when operated effectively.
- **Mobile Sources:** annual emissions associated with daily operation of vehicles generated by each project in the post-2030 scenario. Mobile-source emissions are based on the trip rates utilized in the traffic study for the 2012 Modified Project prepared by Urban Crossroads (Appendix K), which are based on the ITAM, a travel-demand estimator. Fleet mix for the land uses is derived from SCAG's traffic model validation and ITE truck trip information. Passenger vehicle fleet mix is based on the Orange County fleet mix; however, the fleet mix for truck trips was assigned according to the SCAG model validation, where available. Reductions in vehicle miles traveled ("VMT") are based on CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* (the "CAPCOA Manual") for "compact infill" and urban trip lengths since the Proposed Project Site is located near an urban center and transit. The 2011 Approved Project was considered a compact infill development and the 2012 Modified Project will further improve the jobs/housing balance in the region by increasing the amount of residential units while at the same time reducing the amount of non-residential uses; as a result, the 2012 Modified Project reduces the 2011 Approved Project's significant impact on the jobs/housing balance to less than significant. The 2012 Modified Project is also expected to maintain characteristics typical of compact infill development, as described above, and similar to those in the 2011 Approved Project. Reductions are based on a density of approximately 9.6 dwelling units per acre to 11 dwelling units per acre, location no more than two miles from downtown or job center, four miles from a transit center,

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inclusion of an additional 512 (without the option conversion) to up to 645 (with the optional conversion) below-market-rate units, and connecting pedestrian and bike paths within the Proposed Project Site and offsite. The Proposed Project Site will have a density of intersections per square mile that is similar to 2011 Approved Project. As a result, the 2012 Modified Project and 2011 Approved Projects could result in an over 30 percent reduction in vehicle miles traveled ("VMT"). However, according to the CAPCOA Manual, a limited number of case studies in Southern California described as compact infill show slightly lower levels of reductions. Therefore, to be conservative, it was assumed that there would be only a 25 percent reduction in VMT, which is within the range observed in Southern California.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies ("PPPs") that apply to both the 2011 Approved Project and the 2012 Modified Project that will help to reduce and avoid their respective potential impacts related to GHG emissions. The PPPs have been separated between Citywide GHG reduction strategies and Statewide and Federal GHG reduction strategies.

Citywide Construction Strategies

- PPP 4-1 **City of Irvine Construction and Demolition ("C&D") Debris Recycling and Reuse Ordinance:** The C&D ordinance requires that 1) all residential projects of more than one unit, 2) nonresidential developments on 5,000 square feet or larger, and 3) nonresidential demolition/renovations with more than 10,000 square feet of building, recycle or reuse a minimum of 75 percent of concrete and asphalt and 50 percent of nonhazardous debris generated.

Regional Operational Strategies

- PPP 4-2 **SCAQMD Rule 445 – Wood-Burning Devices:** SCAQMD prohibits installation of wood-burning devices such as fireplaces and wood-burning stoves in new development unless the development is located at an elevation above 3,000 feet or if existing infrastructure for natural gas service is not available within 150-feet of the development. All fireplaces installed within the Proposed Project Site will be natural gas fueled fireplaces.

Statewide and Federal Operational Strategies

- PPP 4-3 **Building and Energy Efficiency Standards (CCR Title 24):** Prior to the issuance of a building permit for residential, commercial, or office structures in the Proposed Project Site, development plans for these structures shall be required to demonstrate that the project meets the 2008 Building and Energy Efficiency Standards. Commonly known as Title 24, these standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2008 standards are approximately 15 percent more energy efficient than the 2005 Building and Energy Efficiency Standards. Plans submitted for building permits shall include written notes demonstrating compliance with the 2008 energy standards and shall be reviewed and approved by the Public Utilities Department prior to issuance of building permits. Design strategies to meet this standard may include maximizing solar orientation for daylighting and passive heating/cooling, installing appropriate shading devices and landscaping, utilizing natural ventilation, and installing cool

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roofs. Other techniques include installing insulation (high R value) and radiant heat barriers, low-e window glazing, or double-paned windows.

- PPP 4-4 **Title 24 Code Cycles: Net-Zero Buildings (Residential & Non-Residential):** The California Public Utilities Commission adopted its Long-Term Energy Efficiency Strategic Plan on September 18, 2008, presenting a roadmap for all new residential and commercial construction to achieve a zero-net energy standard. This Plan outlines the goal of reaching zero net energy in residential construction by 2020 and in commercial construction by 2030. Achieving this goal will require increased stringency in each code cycle of California's Energy Code (Title 24).
- PPP 4-5 **California Renewable Portfolio Standard:** CARB's Renewable Portfolio Standard (RPS) is a foundational element of the State's emissions reduction plan. In 2002, Senate Bill 1078 established the California RPS program, requiring 20 percent renewable energy by 2017. In 2006, Senate Bill 107 advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II. On September 15, 2009, Governor Arnold Schwarzenegger signed Executive Order S-21-09 directing CARB to adopt regulations increasing RPS to 33 percent by 2020. These mandates apply directly to investor-owned utilities, which in the case of the 2012 Modified Project is Southern California Edison ("SCE").
- PPP 3-4 **California Low Carbon Fuel Standard:** On January 18, 2007, Governor Arnold Schwarzenegger issued Executive Order S-1-07 requiring the establishment of a Low Carbon Fuel Standard ("LCFS") for transportation fuels. This statewide goal requires that California's transportation fuels reduce their carbon intensity by at least 10 percent by 2020. Regulatory proceedings and implementation of the LCFS have been directed to CARB. The LCFS has been identified by CARB as a discrete early action item in the Scoping Plan. CARB expects the LCFS to achieve the minimum 10 percent reduction goal; however, many of the early action items outlined in the Scoping Plan work in tandem with one another. To avoid the potential for double-counting emission reductions associated with AB 1493 (Pavley), the Scoping Plan has modified the aggregate reduction expected from the LCFS to 9.1 percent.
- PPP 4-7 **Federal Corporate Average Fuel Economy ("CAFE") Standards:** The 2007 Energy Bill creates new federal requirements for increases in fleetwide fuel economy for passenger vehicles and light trucks. The federal legislation requires a fleetwide average of 35 miles per gallon (mpg) to be achieved by 2020. The National Highway Traffic Safety Administration is directed to phase in requirements to achieve this goal. Analysis by CARB suggests that this will require an annual improvement of approximately 3.4 percent between 2008 and 2020.
- PPP 4-8 **California Assembly Bill 1493 – Pavley Standards:** On July 22, 2002, Governor Gray Davis signed Assembly Bill 1493 requiring CARB to develop and adopt regulations designed to reduce greenhouse gases emitted by passenger vehicles and light-duty trucks beginning with the 2009 model year. The standards set within the Pavley regulations are expected to reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016. California had petitioned the USEPA in December 2005 to allow these more stringent standards and California executive agencies have repeated their commitment to higher mileage standards. On July 1, 2009, the USEPA granted California a waiver that will enable the state to enforce stricter tailpipe emissions on new motor vehicles.

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- PPP 4-9 **SB 375:** SB 375 requires the reduction of GHG emissions from light trucks and automobiles through land use and transportation efforts that will reduce vehicle miles traveled ("VMT"). In essence, SB 375's goal is to control GHGs by curbing urban sprawl and through better land use planning. SB 375 essentially becomes the land use contribution to the GHG reduction requirements of AB 32, California's global warming bill enacted in 2006. The Modified Project is consistent with SB 375 strategies to reduce VMT and associated GHG emissions in that it represents a compact, mixed-use development, improves the jobs/housing balance in the city of Irvine and the Orange County Council of Governments Subregion, and provides access to mass transit. According to SCAG's 2008 Regional Comprehensive Plan, SCAG's Land Use and Housing Action Plan can be expected to result in a 10 percent reduction in VMT in 2035 when compared to current trends.

Citywide Operational Strategies

- PPP 4-10 **Transit Service to LAX:** Although the City of Irvine is largely serviced by John Wayne Airport, Los Angeles International Airport ("LAX") is the regional air transportation hub. Providing direct transit service from the City to LAX can reduce single passenger trips to this destination. The Los Angeles World Airports operates three Flyaway shuttles that provide nonstop airport service to and from Westwood, Van Nuys, and Downtown Los Angeles via the Flyaway program. Since November 16, 2009, a Flyaway shuttle from the Irvine Station to LAX provides nonstop service.
- PPP 4-11 **Comprehensive Signal Retiming and Coordination Program:** Emissions are highest at the lowest travel speeds. The City is currently retiming and coordinating signals throughout Irvine under its ITEMS (Irvine Traffic Engineering System) program. A program to retime and coordinate traffic signals would produce more even traffic flows, so that vehicles are not starting and stopping constantly. These types of programs can improve vehicular level of service ("LOS"), thereby decreasing emissions for the same volume of vehicles.
- PPP 4-12 **Waste Reduction:** The City adopted a Zero Waste program in 2007 to approach waste management. The City recovers approximately 66 percent of its waste for recycling and composting, which exceeds the state's AB 939 waste diversion goals. Furthermore, waste haulers establish rate schedules according to bin size and frequency of collection. Commercial customers that subscribe to smaller bins (e.g., 2 cubic-yard bins) are routinely charged less by haulers. This pricing structure encourages waste reduction and recycling, and tends to minimize hauler pickups.

Project Design Features

The following project design features apply to the 2012 Modified Project to help to reduce and avoid potential impacts related to GHG emissions.

- PDF 4-1 **Compact/Mixed-Use Development:** The California Energy Commission ("CEC") considers compact development forms beneficial for minimizing energy consumption that leads to greenhouse gas emissions. In fact, the CEC's report on the connections between land use and climate change identifies density as the project feature most predictive of the number of vehicle trips and vehicle miles traveled ("VMT") by project occupants. The 2012 Modified Project intensified the residential development on the Proposed Project Site as compared to

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the 2011 Approved Project, and locates additional housing opportunities near major employment and transportation centers. Doing so will tend to reduce VMT on a local and regional basis.

- PDF 4-2 **High Rate of Internal Trip Capture:** With the inclusion of a mix of land uses including office, commercial, industrial, and residential in the Proposed Project Site, the 2012 Modified Project significantly reduces trips outside the Proposed Project Site. This reduces trip length and congestion on the local circulation system outside the Proposed Project Site.
- PDF 4-3 **Low-Flow Fixtures:** The 2012 Modified Project incorporates low-flow water fixtures that will meet the requirements of the California Green Building Standards Code standards. Prior to issuance of building permit, the Applicant or its successor shall submit evidence to the satisfaction of the Director of Community Development that toilets, urinals, sinks, showers, and other water fixtures installed on-site are low-flow water fixtures that meet the California Green Building Standards Code standards.
- PDF 4-4 **Landscaping and Irrigation Systems:** The 2012 Modified Project incorporates automated, high-efficiency landscaping irrigation systems on all master landscaped areas that reduce water use, such as evapotranspiration “smart” weather-based irrigation controllers, and bubbler irrigation; low-angle, low-flow spray heads; moisture sensors; and use of a California-friendly landscape palette. Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the City’s Director of Community Development that such landscaping irrigation systems will be installed so as to make the 2012 Modified Project consistent with the intent of the California Water Conservation in Landscaping Act of 2006 (“AB 1881”), including provisions to reduce the wasteful, uneconomic, inefficient, and unnecessary consumption of water.
- PDF 4-5 **Use of Reclaimed Water on All Master Landscaped Areas:** Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the City’s Director of Community Development and the Irvine Ranch Water District (“IRWD”) that the landscape plans incorporate the use of reclaimed water in all master landscaped areas, including master landscaped commercial, multifamily, common, roadways, and park areas. Master landscapes shall also incorporate weather-based controllers and efficient irrigation system designs to reduce overwatering, combined with the application of a California-friendly landscape palette.
- PDF 4-6 **Material Recovery:** The 2012 Modified Project incorporates measures to reduce waste generated by Proposed Project Site residents, occupants and visitors, and to encourage recycling of solid wastes, utilizing the Orange County Integrated Waste Management Department’s material recovery facilities to recycle glass, plastic, cans, junk mail, paper, cardboard, greenwaste (e.g., grass, weeds, leaves, branches, yard trimmings, and scrap wood), and scrap metal. Future employees, residents, and customers would participate in these programs. These measures include the requirement to include on-site recycling facilities at all commercial, retail, industrial, and multi-family residential developments. In addition, educational materials identifying available recycling programs shall be distributed to all land uses, including single-family residential.

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- PDF 4-7 **Energy Star Appliances:** EnergyStar appliances (excluding refrigerators), such as dishwashers, clothes washers, clothes dryers, air conditions, furnaces, and water heaters, shall be offered or installed in all residential dwelling units.
- PDF 4-8 **Building Energy Efficiency:** Residential dwellings and non-residential buildings will be constructed so that they achieve 15 percent higher energy efficiency than the applicable standards set forth in the 2008 California Building and Energy Efficiency Standards (Title 24, Part 6 of the California Building Code) or meet the standards in effect at the time of issuance of building permit. The Energy Commission's 2013 Building Energy Efficiency Standards are 25 percent more efficient than the 2008 standards for residential construction and 30 percent more efficient for nonresidential construction. The 2013 Energy Efficiency Standards, which take effect on January 1, 2014, offer builders more efficient windows, insulation, lighting, ventilation systems and other options that would reduce energy consumption in homes and businesses.
- PDF 4-9 **Carbon Sequestration:** The 2012 Modified Project incorporates landscaping and a plant palate that will foster carbon sequestration within the Proposed Project Site that is comparable to the landscaping and plant palate that was already incorporated into the 2011 Approved Project.
- PDF 4-10 **Softscape Landscaped Areas:** Consistent with the sustainable practices and modern landscaping standards, and consistent with the landscaping used in the 2011 Approved Project, the 2012 Modified Project reduces softscape (e.g., plants/horticultural elements of landscape design) landscaped areas by 28 percent as compared to the default assumption in CalEEMod.

Impact Threshold Analysis

The following analysis compares the potential GHG emissions associated with implementation of the 2012 Modified Project to the GHG emissions associated with implementation of the 2011 Approved Project, and assesses the significance of the 2012 Modified Project's emissions.

IMPACT 5.4-1: ***ALTHOUGH THE 2012 MODIFIED PROJECT'S GHG EMISSIONS WOULD BE GREATER THAN THE 2011 APPROVED PROJECT'S GHG EMISSIONS, LIKE THE 2011 APPROVED PROJECT, THE 2012 MODIFIED PROJECT WOULD NOT GENERATE GHG EMISSIONS, EITHER DIRECTLY OR INDIRECTLY, THAT WOULD HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT. [IMPACT GHG-1]***

Impact Analysis: In accordance with the amendments to the CEQA Guidelines, emissions inventories were compiled to project GHG emissions generated by the 2011 Approved Project and the 2012 Modified Project. The 2012 Modified Project's GHG emissions were compared to the 2011 Approved Project's emissions, which constitute the CEQA baseline. In addition, the significance of the 2012 Modified Project's emissions was assessed using the SCAQMD's draft target efficiency threshold of 4.8 MTons of CO₂e per service population ("SP") per year, discussed above.

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The Significance of the 2012 Modified Project's GHG Emissions Based on SCAQMD's Efficiency Threshold

As discussed above, since no numeric threshold for determining the significance of construction or operational GHG emissions from a residential/commercial development project has been adopted by any state agency or by the SCAQMD, the City has determined that it will evaluate the significance of the GHG emissions resulting from the 2012 Modified Project by using the SCAQMD's draft target efficiency metric threshold for 2020 of 4.8 MTons of CO₂e per SP per year. This efficiency metric is derived from average reductions in GHG emissions needed in order to be consistent with AB 32. Table 5.4-3, *The 2012 Modified Project GHG Emissions Inventory – Efficiency Metric*, reports the efficiency of the 2012 Modified Project in terms of its GHG emissions for two scenarios: one scenario includes its annual operational emissions only, and the other scenario includes both operational and construction emissions together. For the second scenario, one-time emissions, such as vegetation changes and construction emissions, were amortized over 30 years and then combined with annual operational emissions. The estimated service population total for the 2012 Modified Project has been calculated to be 36,829 persons without the optional conversion and 38,176 persons with the optional conversion. This includes an employment population of 13,101 (or 11,497 with the optional conversion) (excluding the 4,471 employees associated with the Great Park and County-owned parcels) and a resident population of 23,728 (or 26,679 with the optional conversion) (see Section 5.8, *Population and Housing*, of this DSSEIR).

As shown in Table 5.4-3, dividing the total operational GHG emissions for the 2012 Modified Project by the service population results in an efficiency metric of 4.41 MTons of GHG/SP per year for the 2012 Modified Project without the optional conversion and 4.30 MTons of GHG/SP per year with the optional conversion. Based on the 4.8MTons/SP threshold, this means that the 2012 Modified Project would have a less than significant impact on GHG emissions.

Taking in to account the annualized construction emissions and vegetation changes for the 2012 Modified Project, the 2012 Modified Project's annualized construction and operational emissions together yields an efficiency metric for the 2012 Modified Project of 4.47 MTons/SP per year without the optional conversion and 4.36 MTons/SP per year with the optional conversion. These are also both below the SCAQMD's efficiency metric of 4.8 MTons/SP per year.

Therefore, under both scenarios, the 2012 Modified Project's efficiency metrics are below the SCAQMD's draft threshold, meaning that like the 2011 Approved Project, the 2012 Modified Project would have a less than significant impact on GHG emissions.

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Table 5.4-3

The 2012 Modified Project GHG Emissions Inventory – Efficiency Metric

<i>Category</i>	<i>Modified Project (without Optional Conversion) MTons/Year</i>	<i>Modified Project (with Optional Conversion) MTons/Year</i>
Service Population	36,829	38,176
Total Annual Emissions (without Amortized One-Time Emissions)	162,406	164,152
Emissions Per Service Population (SP) – Operational Only	4.41	4.30
Draft SCAQMD Efficiency Threshold	4.8	4.8
Exceeds SCAQMD's Draft Efficiency Threshold	No	No
Total Annual w/Amortized One-Time Emissions	164,668	166,414
Emissions Per Service Population (SP) – Construction and Operational	4.47	4.36

Source: ENVIRON 2012.

Comparison of the GHG Emissions Inventories for the 2011 Approved Project and the 2012 Modified Project

Annual GHG emissions that would be generated by the 2011 Approved Project and by the 2012 Modified Project are compared in Table 5.4-4, *The 2011 Approved Project and 2012 Modified Project GHG Emissions Inventories – Total Emissions*. The GHG emissions identified include emissions reductions from applicable plans, programs and policies (see PPPs 4-1 through 4-12 above) and Project Design Features (see PDFs 4-1 through 4-10 above), but only to the extent that their effects can be quantified (see Appendix D for a detailed discussion of the features that were quantified). In addition, one-time emissions, such as vegetation changes and construction emissions, were amortized over 30 years and then combined with annual operational emissions. As reported in Table 5.4-4, the operational GHG emissions for the 2011 Approved Project with amortized one-time emissions total 146,573 MTons per year, and for the 2012 Modified Project total 164,668 MTons per year (or 166,414 MTons per year with the optional conversion). Therefore, the 2012 Modified Project's GHG emissions are greater than the GHG emissions of the 2011 Approved Project. However, because the 2012 Modified Project's efficiency metric falls below the adopted threshold, the 2012 Modified Project's GHG impacts would be less than significant.

Conclusion

As demonstrated above, based on SCAQMD's most recent draft target efficiency threshold, the 2012 Modified Project's GHG emissions would result in less than significant impacts looking at either operational emissions alone or construction and operational emissions together. Like the 2011 Approved Project, GHG emissions impacts would remain less than significant even with implementation of the modifications proposed by the 2012 Modified Project.

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*Table 5.4-4
The 2011 Approved Project and 2012 Modified Project GHG Emissions
Inventories – Total Emissions*

<i>Category</i>	<i>2011 Approved Project MTons/Year</i>	<i>2012 Modified Project (without optional conversion) MTons/Year</i>	<i>2012 Modified Project (with optional conversion) MTons/Year</i>
Area	3,242	6,294	7,089
Energy	31,023	41,345	42,009
Water Use	3,063	3,027	3,197
Waste Disposal	3,020	4,005	4,122
Traffic	103,538	107,735	107,735
Total Annual Emissions (without Amortized One-Time Emissions)	143,886	162,406	164,152
Amortized Construction	3,214	3,214	3,214
Amortized Vegetation	-527	-952	-952
Total Annual w/Amortized One-Time Emissions	146,573	164,668	166,414

Source: ENVIRON 2012.

IMPACT 5.4-2: THE 2012 MODIFIED PROJECT WOULD NOT CONFLICT WITH AN APPLICABLE PLAN, POLICY OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS. [IMPACT GHG-2]

Impact Analysis: For purposes of this DSSEIR, the City has determined that a project would normally have a significant effect on the environment if it would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. While actions taken in California alone cannot stabilize the climate, the state's actions set an example and help to drive the global progress toward reduction of GHG. If the industrialized world were to follow the emission reduction targets established by California, and industrializing nations reduced emissions according to the lower emissions path (lower emissions IPPC scenario B1), medium or higher warming ranges of global temperature increases might be avoided, along with the most severe consequences of global warming (IPCC 2007). In 2007, the CEC published *The Role of Land Use in Meeting California's Energy and Climate Change Goals* (CEC 2007). In this publication, the CEC acknowledged that California's land use patterns shape energy use and the production of GHG. Transportation contributes a large percentage of the state's GHG emissions, and research shows that increasing a community or development's density and accessibility to job centers are the two most significant factors for reducing VMT through design (CEC 2007).

In accordance with AB 32, CARB developed the Scoping Plan to outline the state's strategy to achieve 1990 level emissions by year 2020. To estimate the reductions necessary, CARB projected statewide year 2020 BAU GHG emissions (i.e., GHG emissions in the absence of statewide emission reduction measures). CARB identified that the state as a whole would be required to reduce GHG emissions by 28.5 percent from year 2020 BAU. The SCAQMD's most recent draft efficiency threshold for 2020 of 4.8 MTons of CO₂e per SP per year is derived from average reductions needed to be consistent with AB 32; therefore, this efficiency metric also serves to indicate whether a development project would or would not conflict with AB 32's reduction mandate and the plans, policies and regulations adopted to achieve that reduction. As shown previously in Table 5.4-3, the 2012 Modified Project's annual operational GHG

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emissions, and its aggregated annualized construction and annual operational emissions result in efficiency metrics that are lower than the SCAQMD's draft efficiency threshold. Accordingly, the 2012 Modified Project would be consistent with plans, policies, and regulations concerning GHG emissions.

Additionally, compliance with the federal and statewide GHG emissions reduction measures that are being implemented over the next 10 years would reduce the 2012 Modified Project's GHG emissions (see PPPs 4-3 through 4-9). Table 5.4-5, *Consistency with Existing Plans, Policies, and Programs*, includes a consistency analysis with existing PPPs. As Table 5.4-5 demonstrates, the 2012 Modified Project would not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions, and for this reason the 2012 Modified Project would have a less than significant impact under regarding conflict with a plan, policy or regulation adopted for the purpose of reducing GHG emissions.

*Table 5.4-5
2012 Modified Project Consistency with Existing GHG Plans, Policies, and Programs*

<i>PPP</i>	<i>Description</i>
PPP 4-1	City of Irvine C&D Debris Recycling and Reuse Ordinance requires that 1) all residential projects of more than one unit, 2) nonresidential developments on 5,000 square feet or larger, and 3) nonresidential demolition/renovations with more than 10,000 square feet of building recycle or reuse a minimum of 75 percent of concrete and asphalt and 50 percent of nonhazardous debris generated. The 2012 Modified Project's compliance with this ordinance would reduce GHG emissions associated with waste disposal.
PPP 4-2	SCAQMD Rule 445 prohibits installation of wood-burning devices such as fire places and wood-burning stoves in new development, with few exceptions. All fireplaces installed within the Proposed Project Site under the 2012 Modified Project will be natural gas fueled fireplaces and, therefore, its GHG emissions would be reduced.
PPP 4-3	Building and Energy Efficiency Standards (CCR Title 24) applicable to the 2012 Modified Project require that new structures meet the 2008 Building and Energy Efficiency Standards. PDF 4-8 identifies that the 2012 Modified Project would exceed these requirements as residential dwellings and non-residential buildings will be constructed so that they achieve 15 percent higher energy efficiency than the 2008 Building and Energy Efficiency Standards.
PPP 4-4	Title 24 Code Cycles identify a goal of reaching zero net energy in residential construction by 2020 and in commercial construction by 2030. Achieving this goal will require increased stringency in each code cycle of California's Energy Code (Title 24). As specified above, PDF 4-8 ensures that residential dwellings and non-residential buildings will be constructed so that they achieve 15 percent higher energy efficiency than the 2008 Building and Energy Efficiency Standards. Consequently, the 2012 Modified Project, like the 2011 Approved Project, would exceed the existing statewide requirements for new construction. The planting of trees in accordance with PDF 4-9 would also result in a one-time carbon sequestration. In addition, water conservation and reduction measures implemented by the 2012 Modified Project (see PDFs 3-3, 3-4, 3-5, and 3-10), which were also included in the 2011 Approved Project, will reduce GHG emissions from energy associated with water use.
PPP 4-5	Executive Order S-21-09 directs CARB to adopt regulations increasing California's RPS to 33 percent by 2020. These mandates apply directly to investor-owned utilities, which in this case for the 2012 Modified Project is SCE. Energy purchased by residential and non-residential customers within the Proposed Project Site, which is within the service area for SCE, would meet these standards. Like the 2011 Approved Project, GHG emissions associated with the 2012 Modified Project would be reduced as a result of 33 percent of energy purchased coming from renewable sources.
PPP 4-6	CARB's LCFS requires California's transportation fuels to reduce their carbon intensity by at least 10 percent by 2020. CARB expects the LCFS to achieve the minimum 10 percent reduction goal; however, many of the early action items outlined in the Scoping Plan work in tandem with one another. To avoid the potential for double-counting emission reductions associated with AB 1493, the Scoping Plan has modified the aggregate reduction expected from the LCFS to 9.1 percent. Fuels used by construction equipment and fuel associated with the operational phases of the 2012 Modified Project would comply with the LCFS, consistent with the 2011 Approved Project.

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Table 5.4-5

2012 Modified Project Consistency with Existing GHG Plans, Policies, and Programs

PPP 4-7	Federal CAFE Standards require increases in fleetwide fuel economy for passenger vehicles and light trucks. The federal legislation requires a fleetwide average of 35 miles per gallon (mpg) to be achieved by 2020. The National Highway Traffic Safety Administration is directed to phase in requirements to achieve this goal. Analysis by CARB suggests that this will require an annual improvement of approximately 3.4 percent between 2008 and 2020. Passenger cars associated with trips generated by the 2012 Modified Project have been assumed to comply with the CAFE standards for the model year, consistent with the 2011 Approved Project. Based on the estimated vehicle turnover at buildout in post-2030, GHG emissions would be reduced as a result of improved fuel efficiency in future model years.
PPP 4-8	California Assembly Bill 1493 – Pavley Standards are expected to reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016. Passenger cars associated with trips generated by the 2012 Modified Project have been assumed to comply with the Pavley Standards for the model year, consistent with the 2011 Approved Project. Based on the estimated vehicle turnover at buildout in post-2030, GHG emissions would be reduced as a result of improved fuel efficiency in future model years.
PPP 4-9	SB 375 requires the reduction of GHG emissions from light trucks and automobiles through land use and transportation efforts that will reduce VMT. In essence, SB 375's goal is to control GHGs by curbing urban sprawl and through better land use planning. Like the 2011 Approved Project, the 2012 Modified Project is consistent with SB 375 strategies to reduce VMT and associated GHG emissions in that it represents a compact, mixed-use development, it improves the jobs/housing balance in the City and Orange County Council of Governments Subregion, and it provides close access to mass transit. According to the 2008 Regional Comprehensive Plan, SCAG's Land Use and Housing Action Plan can be expected to result in a 10 percent reduction in VMT in 2035 when compared to current trends. PDFs 4-1 and 4-2 of the 2012 Modified Project identify GHG reductions associated with compact/mixed-use development and high rate of internal trip capture.
PPP 4-10	Transit Service to LAX: Although the Irvine is largely serviced by John Wayne Airport, LAX is the regional air transportation hub. Providing direct transit service from Irvine to LAX can reduce single passenger trips to this destination. The Los Angeles World Airports operates three Flyaway shuttles that provide nonstop airport service to and from Westwood, Van Nuys, and Downtown Los Angeles via the Flyaway program. Since November 16, 2009, a Flyaway shuttle provides nonstop service to LAX from the Irvine Station. With the Proposed Project Site located adjacent to the Irvine Station, the 2012 Modified Project, like the 2011 Approved Project, would afford easy access to the Flyaway shuttle service, resulting in reduced single-passenger trips to LAX.
PPP 4-11	Comprehensive Signal Retiming and Coordination Program: Emissions are highest at the lowest travel speeds. The City is currently retiming and coordinating signals throughout Irvine under its ITEMS (Irvine Traffic Engineering System) program. A program to retime and coordinate traffic signals would produce more even traffic flows, so that vehicles are not staring and stopping constantly. These types of programs can improve the vehicular level of service, thereby decreasing emissions for the same volume of vehicles. Like the 2011 Approved Project, the 2012 Modified Project would benefit from this program and would not impede it.
PPP 4-12	Waste Reduction: The City adopted a Zero Waste program in 2007 to approach waste management. The City recovers approximately 66 percent of its waste for recycling and composting, which exceeds the state's AB 939 waste diversion goals. Furthermore, waste haulers establish rate schedules according to bin size and frequency of collection. Commercial customers that subscribe to smaller bins (e.g., 2 cubic-yard bins) are routinely charged less by haulers. This pricing structure encourages waste reduction and recycling, and tends to minimize hauler pickups. Commercial and residential customers within the Proposed Project Site would be able to take advantage of the incentives offered, which would reduce waste and associated GHG emissions. In addition, PDF 4-6 requires onsite recycling facilities at multi-family residential and nonresidential land uses to encourage recycling and further reduce GHG emissions from waste disposal.

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5.4.5 *Applicable Mitigation Measures from the 2011 Certified EIR*

The 2011 Certified EIR determined that no significant impacts related to GHG emissions would result from the 2011 Approved Project. Accordingly, no mitigation measures were identified.

5.4.6 *Level of Significance Before Additional Mitigation*

Upon implementation of regulatory requirements, PPPs and PDFs, the following impacts would be less than significant for the 2012 Modified Project: 5.4-1 and 5.4-2.

5.4.7 *Additional Mitigation Measures for the 2012 Modified Project*

No significant impacts related to GHG emissions have been identified for the 2012 Modified Project, as compared to the 2011 Approved Project, and therefore, no additional mitigation measures are required.

5.4.8 *Level of Significance After Additional Mitigation*

The 2012 Modified Project's impacts concerning GHG emissions are less than significant without mitigation.

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5.3 AIR QUALITY

This Section of the DSSEIR compares the air quality impacts of the 2012 Modified Project to the air quality impacts of the 2011 Approved Project. The analysis in this Section is based on the following:

- *Air Quality Technical Report for the Heritage Fields El Toro, LLC*, ENVIRON, June 2012.

A complete copy of this study is included in Appendix C to this DSSEIR.

5.3.1 Environmental Setting

South Coast Air Basin

The Proposed Project Site lies within the South Coast Air Basin (“SoCAB”), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds.

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the Proposed Project Site is the Tustin Irvine Ranch Station Monitoring Station (ID 049087). The average low is reported at 40.2°F in January while the average high is 85.2°F in August (WRCC 2011).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 12.86 inches per year in the area of the Proposed Project Site, as measured in Irvine (WRCC 2011).

Humidity

Although the SoCAB has a semi-arid climate, the air near the surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the ocean effect is dominant. Periods of heavy fog, especially along the coastline, are frequent; low stratus clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB.

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Wind

Wind patterns across the south coastal region are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are re-established.

The mountain ranges to the east of the SoCAB affect the transport and diffusion of pollutants by inhibiting the eastward transport of pollutants. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the “mixing height.” The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the vicinity of Proposed Project Site.

Air Pollutants of Concern

Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb) are primary air pollutants. Of these, CO, SO₂, NO_x, PM₁₀, and PM_{2.5} are “criteria air pollutants,” which means that ambient air quality standards (AAQS) have been established for them. VOC and NO_x are criteria pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary pollutants.

A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below. Other pollutants, such as carbon dioxide (CO₂), a natural by-product of animal respiration that is also produced in the combustion process, have been linked to phenomena such as global climate change. These emissions are unregulated and the South Coast Air Quality Management District (“SCAQMD”) has not yet adopted thresholds for them applicable to residential and commercial development projects. Greenhouse gas (“GHG”) emissions that affect global climate change, including

CO₂, methane (CH₄), nitrous oxide (N₂O), and fluorinated gases, are discussed in Chapter 5.3, *Greenhouse Gas Emissions*, of this DSSEIR.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005).

Volatile Organic Compounds (VOC) are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by VOCs, but rather by reactions of VOCs to forms of secondary pollutants such as ozone (SCAQMD 2005).

Nitrogen Oxides (NO_x) serve as integral participants in the process of photochemical smog production. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO₂ is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_x acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens (SCAQMD 2005).

NO₂ is a by-product of fuel combustion. The principal form of NO₂ produced by combustion is NO, but NO reacts with oxygen to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 part per million (ppm). NO₂ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO₂ also contributes to the formation of PM₁₀, PM_{2.5}, and ozone (SCAQMD 2005).

Sulfur Dioxide (SO₂) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO₂. At sufficiently high concentrations, SO₂ may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO₂ may do greater harm by injuring lung tissue. A primary source of SO₂ emissions is high-sulfur-content coal. Gasoline and natural gas have very low sulfur content and hence do not release significant quantities of SO₂ (SCAQMD 2005).

Particulate Matter (PM) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM₁₀, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 one-millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or PM_{2.5}, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 one-millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading. Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005).

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Fugitive dust primarily poses two public health and safety concerns. The first concern is that of respiratory problems attributable to the particulates suspended in the air. Diesel particulates are classified by the California Air Resources Board (“CARB”) as a carcinogen. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent (much like sandblasting activities). Finally, fugitive dust can result in a nuisance factor due to the soiling of proximate structures and vehicles (SCAQMD 2005).

Ozone (O_3), or smog, is one of a number of substances called photochemical oxidants that are formed when VOC and NO_x (both by-products of the internal combustion engine) react with sunlight. O_3 is present in relatively high concentrations in the SoCAB, and the damaging effects of photo chemical smog are generally related to the concentrations of O_3 . O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, O_3 has been tied to crop damage, typically in the form of stunted growth and premature death. O_3 can also act as a corrosive, resulting in property damage such as the degradation of rubber products (SCAQMD 2005).

Lead (Pb) concentrations decades ago exceeded the state and federal AAQS by a wide margin, but have not exceeded state or federal air quality standards at any regular monitoring station since 1982 (SCAQMD 2005). However, in 2008 the United States Environmental Protection Agency (USEPA) and CARB adopted more strict lead standards and special monitoring sites immediately downwind of lead sources¹ recorded very localized violations of the new state and federal standards. As a result of these localized violations, the Los Angeles County portion of the SoCAB was designated in 2010 as non-attainment under the California and National AAQS for lead (SCAQMD 2010). The 2011 Approved Project and 2012 Modified Project are not characteristic of industrial-type projects that have the potential to emit lead. Therefore, lead is not a pollutant of concern for the 2011 Approved Project or the 2012 Modified Project.

Toxic Air Contaminants

The public’s exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.” A substance that is listed as a hazardous air pollutant (“HAP”) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (“EPA”), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics “Hot Spot” Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB

¹ Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce, Quemetco, Inc. in the City of Industry, Trojan Battery Company in Santa Fe Springs, and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 identified that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2010).

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adopts an “airborne toxics control measure” for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics “Hot Spot” Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

Since the last update to the TAC list in December 1999, CARB has designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered as TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

In 2000, SCAQMD conducted a study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk. In 2008, the SCAQMD conducted its third update to its study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in one million. The largest contributor to this risk was diesel exhaust, accounting for approximately 84 percent of the air toxics risk (SCAQMD 2008). In the vicinity of the Proposed Project Site, excess cancer risk ranges from 391 to 652 (SCAQMD 2012).

Regulatory Framework

AAQS have been promulgated at the local, state, and federal levels for criteria pollutants. The Proposed Project Site is in the SoCAB and is subject to the rules and regulations imposed by the SCAQMD, as well as, the California Ambient Air Quality Standards (“CAAQS”) adopted by CARB and federal National Ambient Air Quality Standards (“NAAQS”).

Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting NAAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate

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the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The CAAQS tend to be more restrictive than the NAAQS and are based on even greater health and welfare concerns.

These NAAQS and CAAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those “sensitive receptors” most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 5.3-1, these pollutants include O₃, NO₂, CO, SO₂, PM₁₀, PM_{2.5}, and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

*Table 5.3-1
Ambient Air Quality Standards for Criteria Pollutants*

<i>Pollutant</i>	<i>Averaging Time</i>	<i>California Standard</i>	<i>Federal Primary Standard</i>	<i>Major Pollutant Sources</i>
Ozone (O ₃)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO ₂)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm	0.075 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	24 hours	0.04 ppm	*	
Suspended Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m ³	150 µg/m ³	

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*Table 5.3-1
Ambient Air Quality Standards for Criteria Pollutants*

<i>Pollutant</i>	<i>Averaging Time</i>	<i>California Standard</i>	<i>Federal Primary Standard</i>	<i>Major Pollutant Sources</i>
Suspended Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	15.0 µg/m ³	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m ³	
Lead (Pb)	Monthly	1.5 µg/m ³	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 µg/m ³	
	3-Month Average	*	0.15 µg/m ³	
Visibility Reducing Particles	8 hours	ExCo = 0.23/km visibility of 10 ≥ miles ¹	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Sulfates	24 hours	25 µg/m ³	No Federal Standard	Sulfates (SO ₄ ²⁻) are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and / or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO ₂) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO ₂ to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H ₂ S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.

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*Table 5.3-1
Ambient Air Quality Standards for Criteria Pollutants*

<i>Pollutant</i>	<i>Averaging Time</i>	<i>California Standard</i>	<i>Federal Primary Standard</i>	<i>Major Pollutant Sources</i>
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2010.

ppm: parts per million; $\mu\text{g}/\text{m}^3$: micrograms per cubic meter

ExCo: Extinction Coefficient

¹ When relative humidity is less than 70 percent.

* Standard has not been established for this pollutant/duration by this entity.

Air Quality Management Planning

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the Air Quality Management Plan (AQMP) for the SoCAB. Since 1979, a number of AQMPs have been prepared.

The most recently adopted comprehensive plan is the 2007 AQMP, which was adopted on June 1, 2007, and which incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP proposes attainment demonstration of the federal $\text{PM}_{2.5}$ standards through a more focused control of SO_x , directly emitted $\text{PM}_{2.5}$, and focused control of NO_x and VOC by 2015. The eight-hour ozone control strategy builds upon the $\text{PM}_{2.5}$ strategy, augmented with additional NO_x and VOC reductions to meet the standard by 2024, assuming an extended attainment date is obtained.

The AQMP provides local guidance for the State Implementation Plan, which provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. Severity classifications for nonattainment range in magnitude: marginal, moderate, serious, severe, and extreme. The attainment status for the SoCAB is listed in Table 5.3-2. The SoCAB is designated as in attainment of the CAAQS for SO_2 , and sulfates. According to the 2007 AQMP, the SoCAB will have to meet the new federal $\text{PM}_{2.5}$ standards by 2015 and the 8-hour ozone standard by 2024, and will most likely have to achieve the recently revised 24-hour $\text{PM}_{2.5}$ standard by 2020. The SCAQMD has recently designated the SoCAB as nonattainment for NO_2 (entire basin) and lead (Los Angeles County only) under the CAAQS and has requested to designate the SoCAB as attainment/maintenance for PM_{10} under the NAAQS.

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Table 5.3-2

Attainment Status of Criteria Pollutants in the South Coast Air Basin

<i>Pollutant</i>	<i>State</i>	<i>Federal</i>
Ozone – 1-hour	Extreme Nonattainment	Extreme Nonattainment ¹
Ozone – 8-hour	Extreme Nonattainment	Severe-17 Nonattainment ²
PM ₁₀	Serious Nonattainment	Serious Nonattainment Proposed Attainment/Maintenance ³
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Attainment ⁴
NO ₂	Nonattainment ⁵	Attainment/Maintenance
SO ₂	Attainment	Attainment
Lead	Nonattainment ⁶	Nonattainment ⁶
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2010.

¹ Under prior standard.

² SCAQMD may petition for “Extreme Nonattainment” designation.

³ Annual standard revoked September 2006. CARB approved the SCAQMD’s request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the National AAQS on March 25, 2010 because the SoCAB has not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007. However, the USEPA has not yet approved this request.

⁴ The EPA granted the request to redesignate the SoCAB from nonattainment to attainment for the CO NAAQS on May 11, 2007 (Federal Register Volume 71, No. 91), which became effective June 11, 2007.

⁵ The state NO₂ standard was made stricter in 2007 from 0.25 ppm to 0.18 ppm. Under the revised standards, the entire SoCAB was designated nonattainment on March 25, 2010. In addition, the USEPA adopted a new 1-hour NO₂ standard of 0.100 ppm on January 22, 2010.

⁶ The Los Angeles County portion of the SoCAB was designated nonattainment for lead under the new federal and existing state AAQS as a result of large industrial emitters. Remaining areas within the SoCAB, including the area in which the Proposed Project Site is located, are unclassified.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the Proposed Project Site and Irvine are best documented by measurements made by SCAQMD. The Proposed Project Site is located within Source Receptor Area (SRA) 19 – Saddleback Valley (Central Orange County). The air quality monitoring station closest to the Proposed Project Site is the Mission Viejo Monitoring Station. However, this station does not monitor NO₂ or SO_x. Consequently, data was obtained from the Costa Mesa Monitoring Station for these criteria pollutants. Data from these stations are summarized in Table 5.3-3. The data shows that the area occasionally exceeds the state and federal one-hour and eight-hour O₃ standards. The data also indicates that the area occasionally exceeds the state PM₁₀ and federal PM_{2.5} standards. The federal PM₁₀ standard has not been violated in the last five years at the Mission Viejo Monitoring Station. The CO, SO₂, or NO₂ standard have not been violated in the last five years at the Mission Viejo (CO) and Costa Mesa (SO₂ and NO₂) Monitoring Stations.

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*Table 5.3-3
Ambient Air Quality Monitoring Summary*

<i>Pollutant/Standard</i>	<i>Number of Days Threshold Were Exceeded and Maximum Concentration Levels During Such Violations</i>				
	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>
Ozone (O₃)¹					
State 1-Hour ≥ 0.09 ppm	3	13	5	9	7
State 8-hour ≥ 0.07 ppm	10	23	10	25	14
Federal 8-Hour > 0.075 ² ppm	6	12	5	15	10
Max. 1-Hour Conc. (ppm)	0.125	0.123	0.108	0.118	0.121
Max. 8-Hour Conc. (ppm)	0.086	0.106	0.090	0.104	0.095
Carbon Monoxide (CO)¹					
State 8-Hour > 9.0 ppm	0	0	0	0	0
Federal 8-Hour ≥ 9.0 ppm	0	0	0	0	0
Max. 8-Hour Conc. (ppm)	1.59	1.64	2.16	1.10	1.00
Nitrogen Dioxide (NO₂)³					
State 1-Hour ≥ 0.18 ⁴ ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.085	0.101	0.074	0.081	0.065
Sulfur Dioxide (SO₂)³					
State 1-Hour ≥ 0.04 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.008	0.005	0.004	0.003	0.004
Coarse Particulates (PM₁₀)¹					
State 24-Hour > 50 µg/m ³	0	1	3	0	1
Federal 24-Hour > 150 µg/m ³	0	0	0	0	0
Max. 24-Hour Conc. (µg/m ³)	41.0	57.0	74.0	42.0	56.0
Fine Particulates (PM_{2.5})¹					
Federal 24-Hour > 35 ^{5,6} µg/m ³	0	1	2	0	1
Max. 24-Hour Conc. (µg/m ³)	35.3	46.9	46.8	32.6	39.2

Source: SCAQMD 2011.

ppm: parts per million; µg/m³: or micrograms per cubic meter; NS: No Standard.

¹ Data obtained from the Mission Viejo Monitoring Station.

² The USEPA recently revised the 8-hour O₃ standard from 0.08 ppm to 0.075 ppm, effective May 2008.

³ Data obtained from the Costa Mesa Monitoring Station.

⁴ The NO₂ standard was amended on February 22, 2007, to lower the 1-hr standard from 0.25 ppm to 0.18 ppm.

⁵ Percentage of samples exceeding standard.

⁶ The USEPA revised the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³; this standard did not take effect until December 2006.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time.

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In addition, the working population is generally the healthiest segment of the public (SCAQMD 1993, SCAQMD 2003, SCAQMD 2005).

5.3.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.
- AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- AQ-3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- AQ-4 Expose sensitive receptors to substantial pollutant concentrations.
- AQ-5 Create objectionable odors affecting a substantial number of people.

Chapter 8, *Impacts Found Not to Be Significant*, substantiates the City's determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR) that impacts associated with the following impacts would be less than significant: AQ-5. This impact will not be addressed in the following analysis.

South Coast Air Quality Management District Thresholds

Regional Significance Thresholds

CEQA allows for a lead agency to utilize the significance criteria established by the applicable air quality management or air pollution control district to assess the significance of a project's impacts on air quality. The SCAQMD has established thresholds of significance for air quality for construction activities and project operation as shown in Table 5.3-4. There are other state and federal criteria pollutants such as lead (state and federal) and hydrogen sulfide (state only) that are not relevant to this analysis.

Table 5.3-4
SCAQMD Regional Significance Thresholds

<i>Air Pollutant</i>	<i>Construction Phase</i>	<i>Operational Phase</i>
Volatile Organic Compounds (VOC)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO _x)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO _x)	150 lbs/day	150 lbs/day
Particulates (PM ₁₀)	150 lbs/day	150 lbs/day
Fine particulates (PM _{2.5})	55 lbs/day	55 lbs/day
Lead (Pb) ¹	3 lbs/day	3 lbs/day

Source: SCAQMD 2011

¹ Lead is typically generated by industrial project and is not a pollutant of concern for the 2011 Approved Project or the 2012 Modified Project.

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CO Hotspot Thresholds

Localized CO impacts are determined based on the presence of congested intersections. The significance of localized project impacts depends on whether the project would cause substantial concentrations of CO. A project is considered to have a significant impact if project-related mobile-source emissions result in an exceedance of the California one-hour and eight-hour CO standards, which are:

- 1 hour = 20 parts per million
- 8 hour = 9 parts per million

Localized Significance Thresholds

The SCAQMD has developed localized significance thresholds (“LSTs”) for emissions of NO₂, CO, PM₁₀, and PM_{2.5} generated at a project site (off-site mobile-source emissions are not included the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS. Projects larger than five acres can determine the localized significance for construction by performing dispersion modeling using the thresholds in Table 5.3-5 for emissions that exceed the LSTs.

*Table 5.3-5
SCAQMD Localized Significance Thresholds*

<i>Air Pollutant Standard (Relevant AAQS)</i>	<i>Concentration</i>
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO ₂ Standard (CAAQS)	0.18 ppm
24-Hour PM ₁₀ Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM _{2.5} Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM ₁₀ Standard – Operation (SCAQMD) ¹	2.5 µg/m ³
24-Hour PM _{2.5} Standard – Operation (SCAQMD) ¹	2.5 µg/m ³

ppm – parts per million

µg/m³ – micrograms per cubic meter

¹ Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM₁₀ and PM_{2.5}, the threshold is established as an “allowable change” in concentration. Therefore, background concentration is irrelevant.

Health Risk Analysis

Whenever project activities would include the use of chemical compounds that have been identified in SCAQMD Rule 1401 relating to TACs, placed on CARB’s TAC list pursuant to AB 1807, or placed on the EPA’s National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the SCAQMD. Table 5.3-6 lists the SCAQMD’s TAC incremental risk thresholds for operation of a project. Residential, commercial, and office uses do not use substantial quantities of TACs and these thresholds are typically applied for new industrial projects. A health risk assessments was not performed for stationary sources for the 2012 Modified Project because the 2012 Modified Project does not propose changes to the types of non-residential land uses identified by the 2011 Approved Project.

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Table 5.3-6

SCAQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Individual Cancer Risk	≥ 10 in 1 million
Cancer Burden	≥ 0.5 excess cancer cases (in areas ≥ 1 in 1 million)
Hazard Index (project increment)	≥ 1.0

Source: SCAQMD 2011

5.3.3 The 2011 Approved Project

In analyzing the air quality related impacts of the 2011 Approved Project, the 2011 Certified EIR used SCAQMD's CEQA Handbook methodologies and thresholds and identified the following conclusions regarding the air quality emissions.

- **AQMP Consistency:** The 2011 Certified EIR concluded that the emissions from the residential and non-residential land uses of the 2011 Approved Project would not impair SCAQMD's ability to meet NAAQS or CAAQS.

Construction-Related Regional Air Quality Impacts: The 2011 Certified EIR concluded that construction air emissions would be above the significance thresholds for VOC, CO, NO_x, PM₁₀, and PM_{2.5}. The 2011 Certified EIR described the construction air impacts after mitigation as significant and unavoidable.

Operational Phase Regional Air Quality Impacts: The 2011 Certified EIR concluded that the operational emissions would exceed the significance thresholds for VOC, NO_x, CO, and PM_{2.5}, and would be significant after mitigation. Accordingly, the operational emissions were identified as a significant and unavoidable impact.

Localized Air Quality Impacts: The 2011 Certified EIR relied on an analysis that performed dispersion modeling to determine maximum localized concentrations of CO, NO_x, PM₁₀, and PM_{2.5} emissions at individual sensitive receptor locations during construction. It was concluded that the 2011 Approved Project would not result in significant impacts on local air quality resulting from construction. In addition, the 2011 Certified EIR demonstrated that there would be no CO exceedances caused by vehicular emissions when idling at intersections, therefore localized CO "hotspot" impacts of the 2011 Approved Project would be less than significant.

Cumulative Impacts: The 2011 Certified EIR concluded that even with the implementation of mitigation measures, PPPs, and PDFs, the 2011 Approved Project's construction emissions would exceed the SCAQMD significance thresholds for VOC, NO_x, CO, PM₁₀, and PM_{2.5}. Therefore, the 2011 Approved Project's contribution to cumulative air quality impacts was determined to be significant and unavoidable.

For long-term operations, the 2011 Certified EIR concluded that regional operational emissions of CO, VOC, NO_x, and PM_{2.5} would be cumulatively considerable. No significant cumulative impacts were identified with regard to CO hot spots.

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5.3.4 Environmental Impacts of the 2012 Modified Project

Modeling Methodology

Construction and operational phase emissions for the 2012 Modified Project were calculated using the California Emission Estimator Model (CalEEMod) Version 2011.1.1, developed by SCAQMD. Localized air dispersion modeling was performed using the US Environmental Protection Agency's Industrial Source Complex 3 Short Term (ISC3ST) model. The analysis includes the following emission sources (see Appendix C for additional details regarding modeling methodology and assumptions)

- **Construction:** one-time emissions associated with construction equipment, construction-related vehicle trips, and off-gas emissions from painting and paving. There are four major construction phases for an urban redevelopment: demolition, site preparation, grading, and building construction. The building construction phase can be broken down into three subphases: building construction, architectural painting, and asphalt paving. Air Quality emissions from these construction phases are largely attributable to fuel use from fuel combustion equipment and vehicles (e.g., construction equipment, hauling, delivery trucks, and worker commuting). The maximum daily construction emissions for the 2011 Approved Project occurred during the grading and site preparation phases. While the 2012 Modified Project may require additional vertical construction², the amount of site preparation and grading construction for the 2012 Modified Project that could occur on a given day is not expected to be any greater than estimated for the 2011 Approved Project. Therefore, the maximum daily construction emissions for the 2012 Modified Project are not expected to be any greater than estimated for the 2011 Approved Project. The additional vertical construction may require additional worker transportation and materials transportation if the construction schedule were to be compressed due to market requirements. Even if this were the case, however, the maximum daily emissions are more likely to be driven by the activity during the site preparation and grading phases. Thus, the emissions from the transportation of these additional workers and materials during vertical construction would not lead to a change in the maximum daily emissions. Although the 2012 Modified Project incorporates the TCA Property into the boundaries of the proposed Combined PA 51, the addition of this acreage is not expected to meaningfully change the total construction emission estimates, since the incremental increase in area for construction is small and the maximum daily site preparation and grading activity is not expected to exceed what was estimated for the 2011 Approved Project.
- **Vegetation Changes:** one-time net carbon sequestration from approximately 18,000 new trees planted on the Proposed Project Site in addition to those incorporated into the 2011 Approved Project.
- **Area Sources:** annual emissions associated with landscape maintenance-related fuel combustion sources, such as lawn mowers, and from natural gas fireplaces. No substantial direct GHG emissions would result from consumer products and architectural coating. Based on information provided by the Applicant, 4,350 dwelling units were assumed to contain natural gas fireplaces for the 2011 Approved Project. For the 2012 Modified Project, 8,444 dwelling units were assumed to contain fireplaces without the optional conversion, and 9,511 dwelling units were

² In the context of this evaluation, "vertical construction" refers to the construction of the building structure as opposed to "horizontal construction" which is related to activities such as demolition and site preparation.

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assumed to contain fireplaces with the optional conversion.³ The landscape-related emissions for the 2012 Modified Project (with and without optional conversion) were reduced by 28% from the CalEEMod defaults, to more accurately represent the type of development and the amount landscaping therein planned in the 2012 Modified Project.

- **Mobile Sources:** annual emissions associated with daily operation of vehicles generated by each project in the post-2030 scenario. Mobile-source emissions are based on the trip rates utilized in the traffic study for the 2012 Modified Project prepared by Urban Crossroads (Appendix K), which are based on the ITAM, a travel-demand estimator. Fleet mix for the land uses is derived from SCAG's traffic model validation and ITE truck trip information. Passenger vehicle fleet mix is based on the Orange County fleet mix; however, the fleet mix for truck trips was assigned according to the SCAG model validation, where available. Reductions in vehicle miles traveled ("VMT") are based on CAPCOA's Quantifying Greenhouse Gas Mitigation Measures for "compact infill" and urban trip lengths since the Proposed Project Site is located near an urban center and transit. The 2011 Approved Project was considered a compact infill development and the 2012 Modified Project will further improve the jobs/housing balance in the region by increasing the amount of residential units while at the same time reducing the amount of non-residential uses; as a result, the 2012 Modified Project reduces the 2011 Approved Project's significant impact on the jobs/housing balance to less than significant. The 2012 Modified Project is also expected to maintain characteristics typical of compact infill development, as described above, and similar to those in the 2011 Approved Project. Reductions are based on a density of approximately 9.6 dwelling units per acre to 11 dwelling units per acre, location no more than two miles from downtown or job center, four miles from a transit center, inclusion of up to an additional 512 (without the option conversion) to up to 645 (with the optional conversion) below-market-rate units, and connecting pedestrian and bike paths within the Proposed Project Site and offsite. The Proposed Project Site will have a density of intersections per square mile that is similar to 2011 Approved Project. As a result, the 2012 Modified Project and 2011 Approved Projects could result in an over 30 percent reduction in vehicle miles traveled ("VMT") compared to the statewide average for a typical similar type of land-use development. However, according to the CAPCOA Manual, a limited number of case studies in Southern California described as compact infill show slightly lower levels of reductions. Therefore, to be conservative, it was assumed that there would be only a 25 percent reduction in VMT, which is within the range observed in Southern California.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies ("PPP") that apply to both the 2011 Approved Project and the 2012 Modified Project that will help to reduce and avoid their respective potential impacts related to air quality:

- PPP 3-1 **SCAQMD Rule 201 – Permit to Construct:** The SCAQMD requires developers who build, install, or replace any equipment or agricultural permit unit, which may cause new emissions of or reduce, eliminate, or control emissions of air contaminants to obtain a permit to construct from the Executive Officer.

³ Electrical fireplaces, if incorporated instead of natural gas fireplaces, would result in decreased GHG emissions compared to a similar sized natural gas fireplace.

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- PPP 3-2 **SCAQMD Rule 402 – Nuisance Odors:** The SCAQMD prohibits the discharge of any quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health or safety of any such persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property to be emitted within the SoCAB.
- PPP 3-3 **SCAQMD Rule 403 – Fugitive Dust (PM₁₀ and PM_{2.5}):** The SCAQMD prohibits any person to cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that: (a) the dust remains visible in the atmosphere beyond the property line of the emission source; or (b) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook) if the dust emission is the result of movement of a motorized vehicle.
- PPP 3-4 **SCAQMD Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities:** This rule specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.
- PPP 3-5 **SCAQMD Rule 445 – Wood-Burning Devices:** SCAQMD prohibits installation of wood-burning devices such as fire places and wood-burning stoves in new development unless the development is located at an elevation above 3,000 feet or if existing infrastructure for natural gas service is not available within 150-feet of the development. All fireplaces installed within the Proposed Project Site will be natural gas fueled fireplaces.

Project Design Features

The following project design features (“PDFs”) have been incorporated into the 2012 Modified Project and will help reduce or avoid its potential air quality impacts.

- PDF 4-1 **Compact/Mixed-Use Development:** The California Energy Commission (CEC) considers compact development forms beneficial for minimizing energy consumption that leads to greenhouse gas emissions. In fact, the CEC’s report on the connections between land use and climate change identifies density as the project feature most predictive of the number of vehicle trips and vehicle miles traveled (“VMT”) by project occupants. Like the 2011 Approved Project, the 2012 Modified Project increases the density of development on the Proposed Project Site. Doing so will tend to reduce VMT on a local and regional basis. For the purpose of this analysis, it was assumed that there would be only a 25% reduction in VMT, which is within the range observed in Southern California.
- PDF 4-2 **High Rate of Internal Trip Capture:** With the inclusion of a mix of land uses including office, commercial, industrial, and residential in the Proposed Project Site, the 2012 Modified Project significantly reduces trips outside the Proposed Project Site. This reduces trip length and congestion on the local circulation system outside the Proposed Project Site.

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- PDF 4-7 **Energy Star Appliances:** EnergyStar appliances (excluding refrigerators), such as dishwashers, clothes washers, clothes dryers, air conditions, furnaces, and water heaters, shall be offered or installed in all residential dwelling units.
- PDF 4-8 **Building Energy Efficiency:** Residential dwellings and non-residential buildings will be constructed so that they achieve 15 percent higher energy efficiency than the applicable standards set forth in the 2008 California Building and Energy Efficiency Standards (Title 24, Part 6 of the California Building Code) or meet the standards in effect at the time of issuance of building permit. The Energy Commission's 2013 Building Energy Efficiency Standards are 25 percent more efficient than the 2008 standards for residential construction and 30 percent more efficient for nonresidential construction. The 2013 Energy Efficiency Standards, which take effect on January 1, 2014, offer builders more efficient windows, insulation, lighting, ventilation systems and other options that would reduce energy consumption in homes and businesses.

The following impact analysis addresses impacts that the Initial Study for the 2012 Modified Project disclosed as potentially significant impacts of the 2012 Modified Project, as compared to the 2011 Approved Project. The applicable potential impacts are identified in brackets after the impact statement.

IMPACT 5.3-1: THE MODIFIED PROJECT IS CONSISTENT WITH THE APPLICABLE AIR QUALITY MANAGEMENT PLAN. [IMPACT AQ-1]

Impact Analysis: The AQMP strategy is a macro-level analysis based on projections from local general plans. The land use designations of the Proposed Project Site are, in part, the foundation for the emissions inventory for the SoCAB in the AQMP. The AQMP is based on projections in population, employment, and VMT in the SoCAB region as projected by SCAG. The two criteria for determining whether a project is consistent with the AQMP are: (1) whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards and (2) whether the project would exceed the assumptions in the AQMP.

Criterion 1

As shown in Table 5.3.5, SoCAB is designated by the state and USEPA as nonattainment for O₃, PM₁₀, PM_{2.5}. The state has designated SoCAB as nonattainment for NO₂. The analyses below of the criteria pollutant emissions during construction and operations demonstrate that, like the 2011 Approved Project, the 2012 Modified Project would result in short-term and long-term emissions that could potentially cause an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards.

Criterion 2

The 2012 Modified Project proposes a General Plan Amendment to allow an additional 4,606 dwelling units (3,412 base units and 1,194 DB units) or up to 5,806 dwelling units if the optional conversion is implemented. The 2012 Modified Project also proposes a General Plan Amendment to allow 3,364,000 square feet of Medical and Science, 1,1318,200 square feet of non-residential Multi-Use (with an optional conversion to convert up to 535,000 square feet of the Multi-Use to residential units), and 220,000 square feet of Community Commercial. Because the 2012 Modified Project would accommodate a mix of office,

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retail, and residential uses within walking distance, the residents within the Proposed Project Site and surrounding area would have less of a need to travel long distances to employment centers. In addition, although the 2012 Modified Project does increase the number of allowable residential units in the proposed Combined PA 51, as compared to the 2011 Approved Project, there is a corresponding decrease in the allowable amount of non-residential square footage.

The 2007 AQMP is designed to accommodate expected future population, housing, and employment growth such as the 2012 Modified Project. The 2007 AQMP is based on SCAG's 2004 regional population, housing and employment projections. Those housing projections were 7 percent (400,000 units) higher than the current draft 2012 AQMP projections for the region for 2030, the horizon forecast year for the 2004 growth projections. Further, as described in the draft 2012 AQMP, SCAG's current data find that, in 2008, housing units in the SoCAB were 2 percent (100,000 units) below SCAG 2004 projections for 2008. The extended economic downturn, which continues to the present time, has further depressed housing growth. As a result, the 2012 Modified Project's increase in housing units is accommodated by the 100,000 existing excess units and estimated 400,000 total excess housing units by 2030 projected in the 2007 AQMP.

Further, the increase in residential units, vehicle trips, and resultant emissions would not be adverse in light of City, regional, and State plans and policies that favor increased housing production, jobs/housing balance, and workforce housing near employment concentrations such as the Irvine Spectrum and the Irvine Business Center. By providing additional residential uses, the 2012 Modified Project would respond to City policies that encourage a balance of housing and job opportunities, as well as regional policies aimed at reducing home-to-work travel through the placement of housing in the vicinity of major employment centers, activity nodes, and in proximity to transit opportunities. Development of the 2012 Modified Project would also help accommodate growth already anticipated in current local and regional plans and policies in a manner that responds to the most prominent need: more housing units. Specifically, the additional residential units of the 2012 Modified Project address the existing and projected need for more housing in Orange County as whole, as well as jobs-rich areas such as Irvine, as discussed in more detail in Section 5.9, *Population and Housing*, of this DSSEIR.

Although certain of the estimated criteria pollutant emissions would exceed SCAQMD thresholds, as reported below, the 2012 Modified Project would be actually be consistent with the 2007 AQMP, in part because it furthers the objectives of SCAG's Regional Comprehensive Plan to increase residential density in close proximity to existing employment and transportation centers. Moreover, due to the nonattainment status of the basin, and because the 2012 Modified Project is an infill project with transit friendly land uses, it would not conflict or obstruct the 2007 AQMP. The 2012 Modified Project is consistent with the 2007 AQMP because it furthers the objectives of SCAG's Regional Comprehensive Plan to increase residential density in close proximity to existing employment and transportation centers. Impacts would remain less than significant.

IMPACT 5.3-2: CONSTRUCTION EMISSIONS OF THE 2012 MODIFIED PROJECT WOULD, LIKE THE 2011 APPROVED PROJECT, EXCEED SCAQMD'S EMISSIONS THRESHOLDS FOR VOC, NO_x, CO, PM₁₀, AND PM_{2.5}. [IMPACT AQ-2 AND AQ-3]

Impact Analysis:

The construction emissions for the 2011 Approved Project have not been analyzed again and those of the 2012 Modified Project (with and without optional conversion) have not been analyzed. The emissions

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from the off-road equipment associated with construction would be approximately the same for the 2012 Modified Project as for the 2011 Approved Project; merely changing the type of certain of the buildings and increasing density primarily through vertical construction would likely not result in any change to the maximum daily construction emissions as discussed above in Section 5.3.4. Accordingly, this potential increase in construction transportation emissions is not expected to change the results of the assessment done for the 2011 Approved Project in the 2011 Certified EIR. While the TCA Property is being added to Combined PA 51, the addition of these acres is also not expected to change the construction emission estimates since the maximum construction activity on any given day is not expected to increase. Therefore, there is no incremental change in construction criteria pollutant emissions for the 2012 Modified Project as compared to the 2011 Approved Project.

As with the 2011 Approved Project, mass criteria air pollutant emissions during construction of the 2012 Modified Project of VOC, NO_x, CO, PM₁₀, and PM_{2.5} would be greater than the applicable SCAQMD mass daily thresholds and are therefore significant. With the approval of the 2012 Modified Project, the construction criteria pollutant emissions and resulting impacts would be the same as the 2011 Approved Project's construction criteria pollutant emissions and resulting impacts reported in the 2011 Certified EIR.

IMPACT 5.3-3: *LONG-TERM OPERATION OF THE 2012 MODIFIED PROJECT WOULD, LIKE THE 2011 APPROVED PROJECT, EXCEED SCAQMD'S EMISSIONS THRESHOLDS FOR VOC, NO_x, CO, AND PM_{2.5}. [IMPACT AQ-2 AND AQ-3]*

Impact Analysis: The results of the CalEEMod computer modeling are reported in Tables 5.3-7, and 5.3-8. As shown in those tables, like those of the 2011 Approved Project, the operational emissions for the 2012 Modified Project (with and without the optional conversions) exceed the SCAQMD's thresholds for VOC, NO_x, CO, and PM_{2.5}, but not for PM₁₀ and SO₂. As those tables also show, the 2012 Modified Project's emissions exceed the 2011 Approved Project's emissions. The City has considered whether there are additional feasible mitigation measures that would reduce the 2012 Modified Project's increased emissions as compared to the 2011 Approved Project, but has concluded that all feasible mitigation measures have already been adopted in the MMRP for the 2011 Approved Project. Therefore, like the 2011 Approved Project, the operational emissions of the 2012 Modified Project (with and without optional conversions) of VOC, NO_x, CO, and PM_{2.5} are considered to be significant and unavoidable under the SCAQMD thresholds; however, like the 2011 Approved Project, the operational emissions of the 2012 Modified Project (with and without optional conversions) of PM₁₀ and SO₂ are less than significant according to the SCAQMD thresholds.

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Table 5.3-7

Summary Comparison of Operational CAP Emissions, 2011 Approved Project and 2012 Modified Project without Optional Conversion, Heritage Fields, Irvine California

Category ¹	VOC		CO		SO ₂		NO _x		PM ₁₀		PM _{2.5}	
	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project
Annual Emissions Associated with Project2												
<i>tons/year</i>												
Area	56	78	54	104	0	0	0.61	1.20	0.52	1.0	0.52	1.0
Natural Gas Use	1.3	1.8	6.6	8.5	0.06	0.10	11	16	0.88	1.3	0.88	1.3
Traffic	49	52	393	417	1.5	1.6	69	68	13	14	8.5	8.9
Total	107	132	453	529	1.6	1.7	81	85	14	16	9.9	11.1
Daily Maximum Emissions Associated with Project2												
<i>maximum lb/day</i>												
Area	315	442	294	571	0.01	0.03	3.4	6.5	7.5	14	7.4	14.4
Natural Gas Use	7.0	10	36	47	0.36	0.55	61	87	4.8	6.9	4.8	6.9
Traffic	303	326	2,399	2,569	9.6	10	425	435	79	83	52	55
Total	625	779	2,729	3,187	10	11	489	529	91	105	64	76
Mass Daily Threshold	55		550		150		55		150		55	
Exceed Threshold	YES	YES	YES	YES	NO	NO	YES	YES	NO	NO	YES	YES

¹ All operational categories presented in the previous operational tables and are relevant to standards.

² Emissions estimated using CalEEMod or methodologies described in the text.

³ The Main Street options do not result in changes in land use or traffic assumptions, their emissions are equivalent. Therefore, no distinctions for these two options are made in this table.

⁴ GPN – Great Park Neighborhoods

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Table 5.3-8

Summary Comparison of Operational CAP Emissions, 2011 Approved Project and 2012 Modified Project with Optional Conversion, Heritage Fields, Irvine California

Category ¹	VOC		CO		SO ₂		NO _x		PM ₁₀		PM _{2.5}	
	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project	2011 Approved Project (GPN)	2012 Modified Project
Annual Emissions Associated with Project²												
<i>tons/year</i>												
Area	56	82	54	117	0	0	0.61	1.3	0.52	1.1	0.52	1.1
Natural Gas Use	1.3	2.0	6.6	8.9	0.06	0.11	11	17	0.88	1.4	0.88	1.4
Traffic	49	52	393	417	1.5	1.6	69	68	13	14	8.5	8.9
Total	107	136	453	543	1.6	1.7	81	87	14	16	9.9	11
Daily Maximum Emissions Associated with Project²												
<i>maximum lb/day</i>												
Area	315	464	294	643	0.01	0.04	3.4	7.4	7.5	16	7.4	16
Natural Gas Use	7.0	11	36	49	0.36	0.59	61	93	4.8	7.5	4.8	7.5
Traffic	303	326	2,399	2,569	9.6	10	425	435	79	84	52	55
Total	625	801	2,729	3,261	10	11	489	536	91	108	64	79
Mass Daily Threshold	55		550		150		55		150		55	
Exceed Threshold	YES	YES	YES	YES	NO	NO	YES	YES	NO	NO	YES	YES

¹ All operational categories presented in the previous operational tables and are relevant to standards.

² Emissions estimated using CalEEMod or methodologies described in the text.

³ The Main Street options do not result in changes in land use or traffic assumptions, their emissions are equivalent. Therefore, no distinctions for these two options are made in this table.

⁴ GPN – Great Park Neighborhoods

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*Table 5.3-9
Maximum Daily Operational Phase Emission Comparison*

Summary	Maximum Daily Emissions (lbs/day) – Winter or Summer					
	VOC	CO	SO ₂	NO _x	PM ₁₀	PM _{2.5}
2011 Approved Project ¹	625	2729	10	489	91	64
2012 Modified Project Without Optional Conversion						
Operational Emissions ¹	779	3187	11	529	105	76
Increase over 2011 Approved Project	154	458	1	40	14	12
Exceeds Threshold?	YES	NO	NO	NO	NO	NO
SCAQMD Threshold	55	550	150	55	150	55
2012 Modified Project With Optional Conversion						
Operational Emissions ¹	801	3261	11	536	108	79
Increase over 2011 Approved Project	176	532	1	47	17	15
Exceeds Threshold?	YES	NO	NO	NO	NO	NO
SCAQMD Threshold	55	550	150	55	150	55

¹ Source: ENVIRON 2011.

Bold = Exceeds SCAQMD Threshold

IMPACT 5.3-4: AS COMPARED TO THE 2011 APPROVED PROJECT, CONSTRUCTION OF THE 2012 MODIFIED PROJECT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SIGNIFICANT AIR POLLUTANT CONCENTRATIONS. [IMPACT AQ-4]

Impact Analysis: The SCAQMD's LST methodology was developed to ensure that a development project would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards or to an increase of PM emissions in excess of the control requirement in SCAQMD Rule 403. SCAQMD recommends that construction projects larger than five acres model the CO, NO₂, PM₁₀ and PM_{2.5} emissions to determine if they are below the applicable ambient air quality thresholds. For pollutants in an attainment area (the SoCAB is classified as an attainment area for NO₂ and CO), SCAQMD suggests that the background concentrations be determined and added to the results of the air dispersion modeling to determine if ambient air standards would be violated.⁴ For pollutants in a non-attainment area (the SoCAB is classified as a non-attainment area for PM₁₀ and PM_{2.5}), SCAQMD has determined that concentrations estimated using the modeling guidance provided by SCAQMD to be below 10.4 µg/m³ in a 24-hour averaging period will result in a less-than-significant impact as discussed in its LST guidance.

As noted above, dispersion modeling to evaluate LST during construction was not conducted in the Air Quality Report (Environ 2012) for the 2012 Modified Project because with the approval of the 2012 Modified Project (with and without the optional conversion), the construction concentrations would be

⁴ SCAQMD. 2008. Final Localized Significance Threshold Methodology. Available at: <http://www.aqmd.gov/ceqa/handbook/lst/lst.html>.

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approximately the same as for the 2011 Approved Project calculated in the 2011 Certified EIR. Merely changing the type of buildings and increasing density primarily through vertical construction would result in no change to the maximum daily construction emissions for the 2012 Modified Project as discussed in Section 5.3.4. The anticipated amount of off-road construction equipment is assumed to remain approximately the same. The 2012 Modified Project has the potential to result in a longer vertical construction period but this not expected to change the maximum daily and annual onsite construction mass criteria pollutant emissions. The increased vertical construction period may result in an increase in offsite construction transportation emissions, but it is not expected to change the results of the assessment (i.e., the maximum daily construction emissions or the onsite annual emissions) as discussed above. While the TCA Property will be added to Combined PA 51, the addition of this property is also not expected to meaningfully change the conclusions of the previous construction LST evaluation in the 2011 Certified EIR since the maximum construction daily emissions on any given day is not expected to increase. Further, the addition of the TCA Property to Combined PA 51 is not likely to meaningfully change the location of the maximum impacted receptors since the modeling evaluation included receptors at the boundary of the construction areas, the location of the additional TCA Property area is not likely to influence the maximum impacted receptors. Therefore, like the 2011 Approved Project, impacts resulting from the construction emissions generated by the 2012 Modified Project (with and without the optional conversion) would be less than significant.

IMPACT 5.3-5: AS COMPARED TO THE 2011 APPROVED PROJECT, OPERATION OF THE 2012 MODIFIED PROJECT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO ELEVATED CONCENTRATIONS OF CO AT INTERSECTIONS. [IMPACT AQ-4]

Impact Analysis: SCAQMD has adopted localized significance thresholds for onsite emissions. However, consistent with the 2011 Approved Project, the 2012 Modified Project does not contain any of the land uses, such as industrial, manufacturing, and warehousing land uses, that require a localized significant threshold analysis for operational emissions to be performed under SCAQMD's LST methodology.

With the turnover of older vehicles, introduction of cleaner fuels and implementation of control technology on industrial facilities, CO concentrations in the SCAQMD have steadily declined, based on historical data from the El Toro monitoring station (for the period from 1981 to 2000) and the Mission Viejo monitoring station (for the period from 2000 to 2008). Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard.

In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: Long Beach Blvd. and Imperial Highway (Lynwood); Wilshire Blvd. and Veteran Ave. (Westwood); Sunset Blvd. and Highland Ave. (Hollywood); and La Cienega Blvd. and Century Blvd. (Inglewood). These analyses concluded that there would not be a violation of CO standards at any four intersections. The busiest intersection evaluated was that at Wilshire Blvd. and Veteran Ave., which has a daily traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the LOS in the vicinity of the Wilshire Blvd./Veteran Ave. intersection and found it to be Level E at peak morning traffic and Level F at peak afternoon traffic. The 2003 AQMP estimated that 1-hour concentration for this intersection was 4.6 ppm, which indicates that the most stringent 1-hour CO standard (20.0 ppm) would likely not be exceeded until the daily traffic at the intersection exceeded more

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than 400,000 vehicles per day.⁵ According to the *Heritage Fields Project 2012 General Plan Amendment / Zone Change Traffic Impact Analysis* (the "Traffic Study"), attached as Appendix I to this DSSEIR, the highest average daily trips, at buildout of the 2012 Modified Project, on a segment of road would be 83,200 for Bake Parkway, between Rockfield Boulevard and Marine Way, which is lower than the daily trip volumes studied by SCAQMD for the busy Los Angeles intersections discussed above. The highest average daily trips at an individual intersection at buildout of the 2012 Modified Project would be approximately 120,604 at the Jamboree Road and Barranca Parkway intersection⁶, which is below the daily traffic volumes that would be expected to generate CO exceedances as evaluated in the 2003 AQMP. This daily trip estimate is based on the peak hour conditions of the intersection. There is no reason unique to SoCAB meteorology to conclude that the CO concentrations at the Jamboree Road and Barranca Parkway intersection would exceed the 1-hour COs standard if modeled in detail, based on the studies undertaken for the 2003 AQMP. Thus, the Air Quality Technical Report (Appendix C to this DSSEIR) determined that a carbon monoxide (CO) "hot spots" analysis is not needed to determine whether the change in the level of service (LOS) of an intersection due to the 2012 Modified Project would have the potential to result in exceedances of the California or National Ambient Air Quality Standards (CAAQS or NAAQS). Based on the above, operation of the 2012 Modified Project, like the operation of the 2011 Approved project, would not have a significant impact related to elevated concentrations of CO at intersections.

5.3.5 Cumulative Impacts

In accordance with the SCAQMD's *CEQA Air Quality Analysis Handbook*, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment adds to the cumulative impact. Cumulative projects within the local area include buildout consistent with the City of Irvine General Plan, projects under construction, and approved projects (refer to Chapter 4, *Environmental Setting*). The greatest source of emissions within the SoCAB is from mobile sources. Due to the extent of the area potentially impacted from cumulative project emissions, the SCAQMD considers a project cumulatively significant when project-related emissions exceed the SCAQMD regional emissions thresholds shown above in Tables 5.3-7 and 5.3-8 (ENVIRON 2012).

Construction

The SoCAB is designated nonattainment for O₃, PM₁₀⁷, PM_{2.5}, and lead (Los Angeles County only) under the California and national AAQS, and nonattainment for NO₂ under the California AAQS. Construction of cumulative projects will further degrade the regional air quality. Already-imposed mitigation measures from the 2011 Certified EIR and associated MMRP, as well as PPPs and PDFs specified for the 2012 Modified Project will assist in mitigating these cumulative impacts and PPPs can be applied to all similar cumulative projects. However, even with the implementation of mitigation measures, PPPs, and PDFs, the 2012 Modified Project's construction emissions would still exceed the SCAQMD significance thresholds for VOC, NO_x, CO, PM₁₀, and PM_{2.5}. Therefore, consistent with the 2011 Approved Project, the 2012 Modified Project's contribution to cumulative air quality impacts would be significant.

⁵ Based on the ratio of the CO standard (20.0 ppm) and the modeled value (4.6 ppm).

⁶ Urban Crossroads, 2012. *Heritage Fields Project 2012 GPA/ZC Traffic Impact Analysis*. Appendix 8.5

⁷ CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the National AAQS on March 25, 2010 because the SoCAB did not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007. However, the USEPA has not yet approved this request.

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Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by the SCAQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. As discussed above, operation of both the 2011 Approved Project and the 2012 Modified Project would result in emissions in excess of the SCAQMD regional daily emissions thresholds for VOC, NO_x, CO, and PM_{2.5}. Therefore, both the 2011 Approved Project's and the 2012 Modified Project's contribution to cumulative operational air quality impacts would be significant.

5.3.6 *Applicable Mitigation Measures from the 2011 Certified EIR*

The following mitigation measures were adopted in the MMRP for the 2011 Approved Project. These mitigation measures apply to the 2012 Modified Project.

Construction Phase

- AQ-1 Prior to the start of demolition and construction within the project area, adjacent sensitive receptors shall be informed of the planned demolition and construction activities. Measures to avoid significantly impacting these receptors shall be developed and implemented by the project proponent in coordination with these uses. Other applicable mitigation measures such as erection of fences around construction areas; staggered use of equipment near sensitive receptors; diversion of truck trips away from receptors; etc.; shall be employed as necessary. Compliance with this measure shall be verified by the Director of Community Development.
- AQ-2 Prior to the commencement of construction activities required to demolish and/or remove existing DON structures, including runways, the Director of Community Development shall receive and approve a construction emissions mitigation plan from the chosen demolition contractor. Prior to the issuance of grading permits, the applicant of any future development project shall submit, and the Director of Community Development shall approve a construction emissions mitigation plan. The plan shall identify implementation procedures for each of the following emissions reduction measures and all feasible mitigation measures shall be implemented. If certain measures are determined infeasible, an explanation thereof shall be provided.
- Utilize off-road construction equipment that conforms to Tier 3 of the United States Environmental Protection Agency, or higher emissions standards for construction equipment over 50 horsepower that are commercially available. The construction contractor shall be made aware of this requirement prior to the start of construction activities. Use of commercially available Tier 3 or higher off-road equipment, which is:
 - Year 2006 or newer construction equipment for engines rated equal to 175 horsepower (hp) and greater;
 - Year 2007 and newer construction equipment for engines rated equal to 100 hp but less than 175 hp; and

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- Year 2008 and newer construction equipment for engines rated equal to or greater than 50 hp but less than 100 hp.

The requirement to use such equipment shall be stated on all grading plans. The construction contractor shall maintain a list of all operating equipment in use on the project site. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site.

- Water exposed soils at least three times daily and maintain equipment and vehicle engines in good condition and in proper tune.
- Wash off trucks leaving the site.
- Replace ground cover on construction sites when it is determined that the site will be undisturbed for lengthy periods.
- Reduce speeds on unpaved roads to less than 15 miles per hour.
- Halt all grading and excavation operations when wind speeds exceed 25 miles per hour.
- Suspend all emission generating activities during smog alerts.
- Use propane- or butane-powered on-site mobile equipment instead of diesel/gasoline, whenever feasible.
- Properly maintain diesel-powered on-site mobile equipment.
- Prohibit nonessential idling of construction equipment to five minutes or less in compliance with California Air Resources Board's Rule 2449.
- Sweep streets with SCAQMD Rule 1186 compliant PM₁₀-efficient vacuum units at the end of the day if substantial visible soil material is carried over to the adjacent streets.
- Use electricity from power poles rather than temporary on-site diesel- or gasoline-powered generators, whenever feasible.
- Use of low-VOC asphalt.
- Maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and tarp materials with a fabric cover or other suitable means.
- Provide temporary traffic controls (e.g., flag persons) during all phases of construction to ensure minimum disruption of traffic.
- Schedule construction activities that affect traffic flow on adjoining streets to off-peak hours to the extent possible.

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- Reroute construction trucks away from congested streets, whenever feasible.
- Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site, whenever feasible.
- Use coatings and solvents with a volatile organic compound (VOC) content lower than required under SCAQMD Rule 1113 (i.e., Super Compliant Paints). All architectural coatings shall be applied either by (1) using a high-volume, low-pressure spray method operated at an air pressure between 0.1 and 10 pounds per square inch gauge to achieve a 65 percent application efficiency; or (2) manual application using a paintbrush, hand-roller, trowel, spatula, dauber, rag, or sponge, to achieve a 100 percent application efficiency. The construction contractor shall also use pre-coated/natural colored building, where feasible. Use of low-VOC paints and spray method shall be included as a note on architectural building plans.

Operational Phase

AQ-3 Prior to the issuance of building permits for any future development, the applicant shall submit, and Director of Community Development shall have approved, an operation-emissions mitigation plan. The plan shall identify implementation procedures for each of the following emissions reduction measures and all feasible mitigation measures shall be implemented. If certain measures are determined infeasible, an explanation thereof shall be provided.

- Utilize built-in energy-efficient appliances to reduce energy consumption and emissions.
- Utilize energy-efficient and automated controls for air conditioners and lighting to reduce electricity consumption and associated emissions.
- Install special sunlight-filtering window coatings or double-paned windows to reduce thermal loss, whenever feasible.
- Utilize light-colored roofing materials as opposed to dark roofing materials to conserve electrical energy for air-conditioning.
- Provide shade trees in residential subdivisions as well as public areas, including parks, to reduce building heating and cooling needs, whenever feasible.
- Ensure that whenever feasible, commercial truck traffic is diverted from local roadways to off-peak periods.
- Centralize space heating and cooling for multiple-family dwelling units and commercial space.
- Orient buildings north/south for reducing energy-related combustion emissions.
- Use solar energy, when feasible.

- Use high rating insulation in walls and ceilings.

AQ-4 Prior to the issuance of building permits, future sales information on available housing and employment opportunities within the project area shall be provided to employees and residents of the project area, so as to encourage employees to live within the residential developments planned on-site and future residents to find employment nearby.

AQ-5 Prior to the issuance of building permits, the applicant shall demonstrate to the satisfaction of the Director of Community Development that future employment generating nonresidential development shall include measures to reduce vehicle trips including: the promotion of carpool incentives and alternative work schedules, easy access to public transit systems, trail linkages between uses, low emissions vehicles fleets, and the provision of on-site facilities such as banking and food courts, and bicycle parking facilities, and other transportation demand management measures, as deemed appropriate.

5.3.7 Level of Significance Before Additional Mitigation

Upon implementation of regulatory requirements, standard conditions of approval, PPPs, PDFs, and the above-listed mitigation measures adopted in the MMRP for the 2011 Approved Project, the following impacts would be less than significant for the 2012 Modified Project: Impact 5.3-1, 5.3-4, and 5.3-5.

Upon implementation of regulatory requirements, standard conditions of approval, PPPs, PDFs, and the above-listed mitigation measures adopted in the MMRP for the 2011 Approved Project, the following impacts would be significant (as they were for the 2011 Approved Project): 5.3-2 and 5.3-3.

5.3.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are identified that would reduce the 2012 Modified Project's construction and operational air pollutant emissions to less than significant levels.

5.3.9 Level of Significance After Additional Mitigation

Impact 5.3-2

Like the 2011 Approved Project, the 2012 Modified Project would result in significant and unavoidable short-term construction air quality impacts due to emissions of VOC, NO_x, CO, PM₁₀ and PM_{2.5} at levels above the applicable thresholds. PPPs 3-1 through 3-4 and Mitigation Measures AQ-1 and AQ-2 would reduce construction emissions to the extent feasible. However, like the 2011 Approved Project, Impact 5.3-2 would remain significant and unavoidable even after mitigation.

Impact 5.3-3

Like the 2011 Approved Project, long-term operation of the 2012 Modified Project (with, and without optional conversion) would result in significant and unavoidable impacts due to emissions of VOC, NO_x, CO, and PM_{2.5}. PPP 3-5, PDFs 4-1, 4-2, 4-7, and 4-8, and Mitigation Measures AQ-3 through AQ-5 would reduce operational phase air quality impacts to the extent feasible. However, like the 2011 Approved Project, Impact 5.3-3 would remain significant and unavoidable even after mitigation.

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5.2 AGRICULTURAL RESOURCES

This section of the DSSEIR describes the impacts of the 2012 Modified Project on existing farmland as compared to the 2011 Approved Project. The information in this section is based on the 2011 Certified EIR, field reconnaissance, review of the Proposed Project Site, aerial photographs, farmland maps, and soils maps.

5.2.1 Environmental Setting

Agricultural Classifications and Uses within the Project Area

The California Department of Conservation, through the Farmland Mapping and Monitoring Program (FMMP) of the Division of Land Resource Protection classifies agricultural land as follows.¹ The latest mapping date for the FMMP maps is 2010.

Prime Farmland: Land which has the best combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.

Farmland of Statewide Importance: Similar to Prime Farmland, this land has a good combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has minor shortcomings, such as greater slopes or less ability to store soil moisture than Prime Farmland. Land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.

Unique Farmland: Lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. This land is used for the production of specific high economic value crops such as oranges, olives, avocados, rice, grapes, or cut flowers. Land must have been used for production of crops at some time during the four years prior to the mapping date.

Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. The Orange County Board of Supervisors has not designated any farmland as being of "Local Importance."

Grazing Land: Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

Urban and Built-up Land: Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, and sewage treatment and water control structures.

¹ See http://www.conservation.ca.gov/dlrp/fmmp/mccu/Pages/map_categories.aspx.

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Other Land: Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines or borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land greater than 40 acres and surrounded on all sides by urban development is mapped as Other Land.

Land Committed to Nonagricultural Use: This optional designation is an overlay to the standard farmland categories described above and represents existing farmland and grazing land, and vacant areas that have a permanent commitment for development. Examples of Land Committed to Nonagricultural Use would include an area undergoing permanent infrastructure installation or for which bonds or assessments have been issued for public utilities. Such lands represent planning areas where there are commitments for future nonagricultural development that are not reversible by a simple majority vote by a city council or board of supervisors.

FMMP Designations and Land Uses

Based on information provided through the California Department of Conservation's FMMP, land within the Proposed Project Site falls into the six of these agricultural land use designations. These designations and their respective acreages are shown in Table 5.2-1, *FMMP Land Use Designations and Acreages*. The locations of the lands with these land classifications are identified in Figure 5.2 1, *Farmland Map*.

*Table 5.2-1
FMMP Land Use Designations and Acreages
Within the Proposed Project Site*

<i>Designation</i>	<i>Acrees</i>
Prime Farmland	313
Farmland of Statewide Importance	86
Unique Farmland	264
Grazing Land	6
Urban and Built-Up Land	1,412
Other Land	375
Source: FMMP 2011	

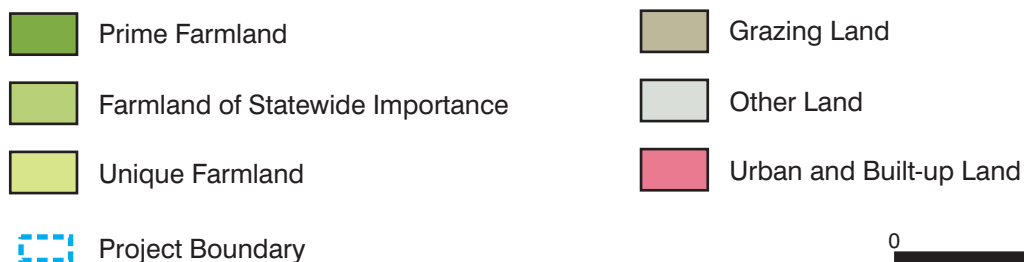
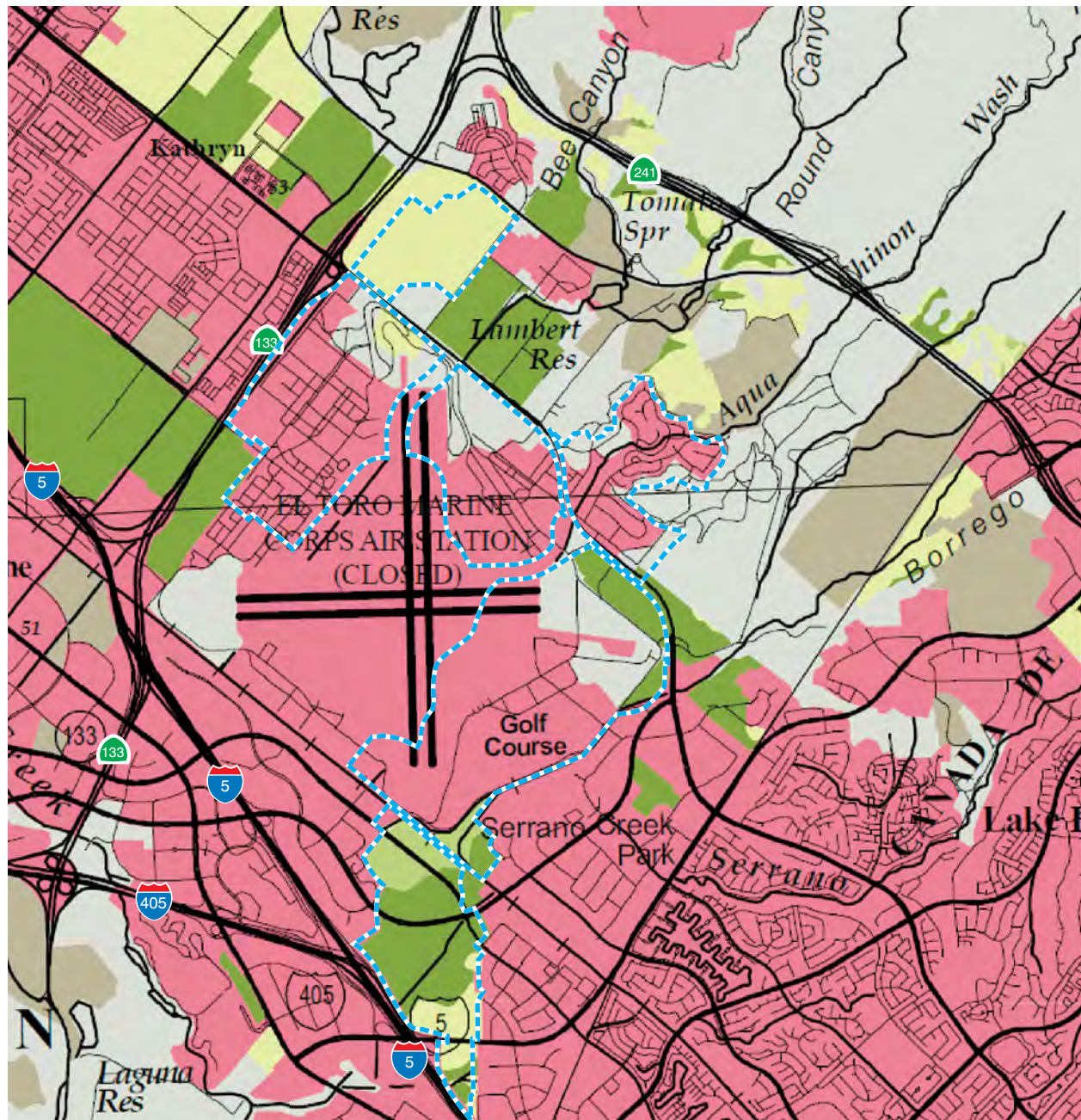
Although portions of the Proposed Project Site are currently designated Prime Farmland, Farmland of Statewide Importance and Unique Farmland, with the exception of 13-acres in District 6, the entire Proposed Project Site has been committed to non-agricultural uses through the existing entitlements granted between 2003 and 2011. Therefore, the appropriate FMMP designation for the Proposed Project Site, with the exception of the 13-acres in District 6, should be "Land Committed to Nonagricultural Use." The City has indicated that it will provide the Department of Conservation with this information during the next update to the FMMP, which is expected to occur in 2013.

Williamson Act

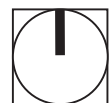
The Williamson Act provides tax incentives for landowners who enter into contracts with the local government for long-term use restrictions on agricultural and open space land for qualifying properties. There are no Williamson Act contracts on any lands within the vicinity of or within the Proposed Project Site (FMMP 2004).

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Farmland Map



0 5,000
Scale (Feet)



Source: DLRP 2011

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.2-1**

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Orange County Agricultural Conversion

Changes in acreages of farmland categories in Orange County between 2008 and 2010 are shown below in Table 5.2-2, *Orange County Farmland Conversion, 2008-2010*.

*Table 5.2-2
Orange County Farmland Conversion, 2008-2010*

<i>Land Category</i>	<i>Total Acreage Mapped</i>		<i>2008-2010 Acreage Change</i>			
	<i>2008</i>	<i>2010</i>	<i>Acres Lost (-)</i>	<i>Acres Gained (+)</i>	<i>Net Change, Acres</i>	<i>Percent Net Change, Acres</i>
Prime Farmland	3,772	3,243	663	134	-529	-14.0%
Farmland of Statewide Importance	441	367	77	3	-74	-16.8%
Unique Farmland	4,209	3,654	650	95	-555	-13.2%
Farmland of Local Importance	0	0	0	0	0	0
<i>Important Farmland Subtotal</i>	<i>8,422</i>	<i>7,264</i>	<i>1,390</i>	<i>232</i>	<i>-1,158</i>	<i>-13.7%</i>
Grazing Land	37,554	37,639	474	559	+85	+0.2%
<i>Agricultural Land Subtotal</i>	<i>45,976</i>	<i>44,903</i>	<i>1,864</i>	<i>791</i>	<i>-1,073</i>	<i>-2.3%</i>
Urban and Built-Up Land	287,924	289,172	75	1,324	+1,249	+0.4%
Other Land	174,843	174,667	990	814	-176	-0.1%
Water Area	972	972	0	0	0	0
Total Area Mapped	509,714	509,714	2,929	2,929	0	0

Source: FMMP 2011

Long-Term Viability of Large Scale Agricultural Production in Orange County

The long-term viability of large-scale agricultural production in Orange County, in general, continues to deteriorate. Factors that impact the viability of such agricultural uses include (1) the cost of land, (2) the cost of water, (3) the cost of labor, (4) property taxes, (5) the impact of urbanization, (6) competition, and (7) the impact of environmental regulation. (City of Irvine, 2006)

- Land Cost:** Land prices in Orange County for raw land in the vicinity of the 2012 Modified Project exceed \$2,000,000 per acre, depending upon variables such as location, intended uses, existing infrastructure, existing land use entitlements, land constraints, and other issues. Commercial agricultural production is not considered economically viable on any parcel valued at more than \$50,000–\$60,000 per acre, since a reasonable rent based on these land values would be prohibitive to a profitable agricultural operation.
- Water Costs:** Water cost is a major component in determining the viability of agricultural operations. Water for agricultural irrigation in the local area is substantially more expensive than in competing agricultural regions such as the Central Coast (including Oxnard and Santa Maria).
- Labor Costs:** In general, an adequate labor supply is available for Irvine growers. The cost of labor is actually slightly lower for Irvine growers than in Oxnard and Santa Maria. Recently,

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however, growers have reported that agricultural workers are moving from the fields to higher paying warehouse, factory, and other support service jobs, which are becoming more plentiful as surrounding areas develop. Even so, the cost of labor for Irvine growers is higher than in competitive markets outside of California where the minimum wage is lower.

- **Property Taxes:** Land in Orange County, including the Proposed Project Site, is increasing in value. Therefore, subject to the constraints of Proposition 13, these areas are subject to high property taxes, making it difficult to obtain a sufficient economic return on the land from agricultural operations. Even with higher taxes, the constraints noted elsewhere do not off-set the economic (tax) benefit of restricting use of the land for the time required by the Williamson Act. The City has no mechanism to require that a property owner participate in the Williamson Act program.
- **Urbanization:** As land surrounding the current agricultural operations continues to develop, operational and economic constraints increase. These constraints include limitations on hours of operation, limits on chemical (pesticide and fertilizer) applications, required setbacks from adjacent nonagricultural uses, air quality issues and cleanup required due to the use of farm equipment on public roads.
- **Competition:** Increasingly, areas in California with lower production costs, such as Santa Maria and Oxnard, are shifting to high value cash crops. This shift has impacted the ability of Orange County farmers to overcome the high cost of agricultural activities in Orange County in the competitive market. In addition, competition from foreign growers is increasing considerably. Produce grown in Mexico, Chile, Argentina, and the Dominican Republic can be produced at dramatically lower costs due to cheap labor, availability of land and resources, a farm-friendly environment, and the lack of regulatory requirements that exist in California.
- **Environmental Regulation:** The regulation of agricultural activities involves an increasingly significant cost for agricultural operations. Both the Clean Water Act and Clean Air Act, as administered through state agency regulations, increasingly affect agriculture, particularly field crops, in nonattainment areas and areas impacting important waterways. For example, under the Clean Air Act, the PM₁₀ rule controls the amount of suspended particulates that can be emitted from a field, just as that regulation applies to a construction project. Also, the Clean Water Act requires states to adopt and implement water quality standards protecting water bodies in the state. The watershed within which the Proposed Project Site lies drains into San Diego Creek and ultimately into the Upper and Lower Newport Bay. These water bodies have been classified as “impaired” under Section 303(d) of the Clean Water Act. Accordingly, the Regional Water Quality Control Board must adopt a Total Maximum Daily Load (TMDL) for these water bodies. The TMDLs must then be allocated between current and future dischargers into those bodies. TMDLs have been adopted for nutrients, sediment, and pathogens, and agricultural operators have been allocated TMDLs for these items. An additional TMDL is currently under development for toxicity, which will include agricultural chemicals. As agricultural activities must be modified in light of new and/or more stringent environmental regulations requiring staff training/certification, changes in agricultural practices, and changes in agricultural chemicals, there are new increased costs that must be borne by the operator.

Regulatory Setting

Local regulations, plans, and guidelines that are potentially applicable to the 2012 Modified Project are summarized below.

City of Irvine Agricultural Legacy Program

The purpose of the Agricultural Legacy Program outlined in City of Irvine General Plan Open Space and Conservation Element Objective L-10 is to mitigate the conversion of agricultural land to nonagricultural uses citywide by facilitating limited-scale agricultural operations and programs on public lands within Irvine. As part of the Agricultural Legacy Program, specific sites in Irvine will be identified and made available for metro-farming within the five year period 2003 to 2008. Metro-farming generally includes small-scale agricultural operations and activities that can be accommodated in an urban environment. Such activities could include, but would not be limited to, small-scale specialty farming, model farming, heritage farming, and community service/educational farming. One example of a metro-farming operation is an Edible Landscape Program, a heritage farming operation involving Southern California Edison easements, where produce is grown within the public easements and sold by the farmer. There are currently farming operations within the Great Park, including the Great Park Farm and Food Lab.

The Agricultural Legacy Program was initially implemented in conjunction with the Northern Sphere project and initially required the identification of 300 acres to be used for agricultural uses. However, since the Northern Sphere project was approved, the Agricultural Legacy Program has identified land conducive to agricultural operations in excess of this 300-acre requirement. As a result of General Plan Objective L-10, described above, and in accordance with the mitigation measures contained in the Northern Sphere Area Final Program EIR, several areas were considered as potentially viable for agricultural operations such as those described above. These conceptual sites include:

- **Site 1:** A 92-acre parcel located in the southern portion of Irvine, generally southeast of the Jeffrey Road interchange at I-405.
- **Site 2:** A 207-acre parcel located generally northeast of Site 1.
- **Site 3:** A 144-acre parcel located south of the I-405/SR-133 interchange.
- **Site 4:** A 7-acre parcel located along the east side of Jeffrey Road south of I-5.
- **Site 6:** A 64-acre parcel located in Irvine's northern Sphere of Influence generally southeast of the transition between the Eastern Transportation Corridor and the Foothill Transportation Corridor (FTC).
- **Site 7:** A 26-acre narrow parcel that extends southeast from Site 6 along a pipeline easement for a distance of approximately one mile.
- **Site 8:** An 18-acre parcel that lies near the eastern end of Site 7, approximately midway between the FTC to the north and Irvine Boulevard to the south.
- **SCE Easements/Properties:** There are several SCE easements/properties where agricultural operations occur below high-voltage transmission lines.

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After the Northern Sphere project was approved and the Agricultural Legacy Program was adopted, the 2003 OCGP EIR was certified with further mitigation measures that strengthened the Agricultural Legacy Program. Specifically, the 2003 OCGP EIR contained mitigation measures encouraging heritage and community service/educational farming operations within utility easements and other lands.

The PA 1/PA 2/PA 9 General Plan Amendment and Zone Change (GPA/ZC) Project, approved by the City in June 2005, nearly tripled the amount of land eligible for the Agricultural Legacy Program by zoning approximately 508 acres of existing agricultural area previously planned for residential development as Exclusive Agriculture and proposing the 508 acres for inclusion in the City's Agricultural Legacy Program. The PA 1/PA 2/PA 9 project also included mitigation measures to reduce the potential impacts of having housing adjacent to agricultural uses to below a level of significance.

In sum, the Agricultural Legacy Program, which was intended to mitigate the impacts of the conversion of agricultural lands to nonagricultural uses citywide, has been implemented more quickly, and on a larger scale, than was initially anticipated. As currently constituted, the Agricultural Legacy Program will ensure that over 800 acres of land will be preserved and can be used for small-scale specialty farming, model farming, heritage farming, and community service/educational farming within Irvine.

City of Irvine Policies and Programs

Continued build-out of Irvine and its Sphere of Influence in accordance with the General Plan would result in the conversion of undeveloped land, including agricultural land, to urban use. In the past few years the City has considered conversion of agricultural lands in undeveloped areas of Irvine and its Sphere of Influence – specifically, PAs 1, 2, 5, 6, 8, 9, 18, 30 39, 40, and 51. In the context of the first of these projects (the Northern Sphere project), the City balanced the impacts attendant to the loss of agricultural lands with both (i) the need to put those lands to other uses – specifically the provision of additional housing and jobs opportunities, and (ii) the practical limitations on the continuation of large scale agricultural operations in Orange County's continually urbanizing environment. That balancing effort, and the policy decision flowing from the balancing effort, was memorialized in the adoption – concurrent with the Northern Sphere approvals – of a revised General Plan Policy L-10. As revised, that General Plan Policy states as follows:

Objective L-10: Agriculture “Encourage the maintenance of agriculture in undeveloped areas of the City until the time of development, and in areas not available for development.”

Policy (a): Provide for farming opportunities in the community, where feasible and appropriate, through an Agricultural Legacy Program facilitating limited scale agricultural operations and programs on public lands. The program may include components such as edible landscape, metro-farming, heritage farming, model farming, education and community service farming and other farm or farm market programs. Locations for implementation of the Agricultural Legacy Program to be considered should, at a minimum, include:

- Designated open space spine network
- Designated open space areas not subject to the Natural Community Conservation Plan (NCCP)

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- Other appropriate publicly owned lands

Policy (b): Consider creating a “working model” farm to act as a center for education and enjoyment of all age groups pursuant to the Agricultural Legacy Program in conjunction with the City’s planning efforts concerning the reuse of MCAS El Toro, or with the South Coast Research Extension owned by UC Regents.

Policy (c): Permit agricultural use of land that is unsuitable for building because it is within flood plains, or is subject to hazards to public health, safety, and welfare or similar constraints precluding development. Conversion from agricultural use may be allowed where the identified hazard conditions have been eliminated.

Policy (d): Permit agriculture uses, on an interim basis, on land designated for development, and consider agricultural uses as part of the City’s planning efforts for the re-use of MCAS El Toro.

Policy (e): Encourage and support federal and state legislation proposed for the purpose of preservation of agricultural lands that are compatible with the City’s goals and objectives.

Policy (f): Allow for conversion of interim and permanent agricultural uses to development to provide land for the construction of housing units consistent with the Land Use and Housing Elements, and the development of commercial and industrial buildings consistent with the provision of job opportunities as described in the Land Use Element, where such conversion does not conflict with other L-10 policies.

Policy (g): Pursue the open space policies contained in the Conservation and Open Space Element and address any open space or aesthetic impacts from the conversion of interim and permanent agricultural uses to development as part of the City’s existing policies for the preservation of open space and existing policies for mitigation of views and aesthetic impacts under the policies in the Conversation and Open Space Element.

In summary, these General Plan policies recognize that permanent retention of existing agricultural land throughout Irvine would conflict with the General Plan’s goals of providing sufficient housing to meet the City’s identified housing needs, retaining areas in Irvine for biological habitat and open space, and achieving fiscal balance as the community builds out.

The City also examined in the Northern Sphere EIR the combined or cumulative impact of the conversion of agricultural lands, and also examined potential locations for agricultural land to be preserved as mitigation for some or all of the conversions of agricultural land considered in these areas. To that same end, the City also examined potential citywide mitigation and fee programs for all of these conversions. The City concluded that it is not appropriate or feasible to preserve large-scale agricultural operations, or to adopt a fee program designed to generate revenue to acquire agricultural lands elsewhere. As a result, the City determined that conversion of mapped farmland to non-agricultural uses due to development of the Northern Sphere Area was a significant and unavoidable impact and a statement of overriding considerations was adopted.

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5.2.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- AG-1 Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?
- AG-2 Conflict with existing zoning for agricultural use, or a Williamson Act contract?
- AG-3 Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
- AG-4 Result in the loss of forest land or conversion of forest land to non-forest use?
- AG-5 Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Chapter 8, *Impacts Found Not to Be Significant*, substantiates the City's determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR), that the following impacts of the 2012 Modified Project, as compared to the 2011 Approved Project, would be less than significant: AG-3, AG-4, and AG-5. Therefore, these impacts will not be addressed in the following analysis.

5.2.3 The 2011 Approved Project

Development of the 2011 Approved Project would not convert any farmland, forest land, or timberland, to non-agricultural uses, other than land that was originally approved for conversion in the 2003 OCGP EIR. No impact to agricultural resources was identified in the 2011 Certified EIR.

The City of Irvine, through certification of the 2003 OCGP EIR, approved the conversion of 802 acres of designated farmland to non-agricultural uses, including: 651 acres of Prime Farmland, 63 acres of Unique Farmland, and 88 acres of Farmland of Statewide Importance. Mitigation Measures Ag-1 through Ag-3 were included in the 2003 OCGP EIR to reduce impacts to agricultural resources; however, even with imposition of those mitigation measures, such impacts remained significant and unavoidable.

However, as Addendum 5 stated, the City's General Plan Objective L-10 establishes the Irvine Agricultural Legacy Program to mitigate the loss of existing agricultural land throughout Irvine where development under the General Plan is designated to occur. Therefore, Addendum 5 concluded that the impact was no longer significant. Addendum 5 further stated that the loss of the 173 acres of Prime Farmland in Planning Area Zone 1 (PAZ 1), now identified as District 8, would not be a significant impact because none of the acreage was being used to grow crops (i.e., the land was used to grow potted nursery plants rather than active farming) and due to the Legacy Program. In addition, the 2008 Farmland Mitigation Mapping Program showed the 2011 Approved Project's Project Site, which is included in the Proposed Project Site, either as Urban and Built-Up Land or as Land Committed to Non-Agricultural Use.

5.2.4 Environmental Impacts of the 2012 Modified Project

The 2012 Modified Project would rezone a 13-acre area in District 6 that is currently zoned 1.1 Exclusive Agriculture to 1.4, Preservation. The 2011 Approved Project includes 117 acres of agriculture in Existing PA 51 in addition to the 13 acres in Existing PA 30, for a total of 130 acres of agriculture. All of the other farmland within Existing PAs 30 and 51 have already been approved for conversion to non-agricultural uses by the 2011 Approved Project – as described above in Section 5.2.3 – and thus do not constitute an impact of the 2012 Modified Project.

Conversion of the 13 acres zoned 1.1 Exclusive Agriculture to 1.4, Preservation, is proposed to allow for the Relocated Wildlife Corridor Feature.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to the 2012 Modified Project and that will help to reduce and avoid potential impacts related to agricultural resources

PPP 2-1 The City shall continue to implement the Agricultural Legacy Program outlined in City of Irvine General Plan Open Space and Conservation Element. Objective L-10 is intended to mitigate the conversion of agricultural land to nonagricultural uses citywide by facilitating limited-scale agricultural operations and programs on public lands within Irvine. As part of the Agricultural Legacy Program, specific sites in Irvine will be identified and made available for metro-farming within five years. Metro-farming generally includes small-scale agricultural operations and activities that can be accommodated in an urban environment. Such activities could include, but not be limited to, small-scale specialty farming, model farming, heritage farming, and community service/educational farming.

Project Design Features

There are no project design features incorporated into the 2012 Modified Project specifically intended to reduce or avoid potential impacts to agricultural resources.

The following impact analysis addresses the 2012 Modified Project's potential impacts on agricultural resources, as compared to the 2011 Approved Project. The applicable potential impacts are identified in brackets after the impact statement.

IMPACT 5.2-1 DEVELOPMENT PURSUANT TO THE 2012 MODIFIED PROJECT WOULD CONVERT 13 ACRES OF PRIME FARMLAND TO ZONING DESIGNATION 1.4 PRESERVATION. [IMPACT AG-1]

The Land Evaluation and Site Assessment (“LESA”) Model (CDC 1997) was used to evaluate the potential impacts of conversion of 13 acres of District 6 (formerly District 9) within the Proposed Project Site from agricultural to preservation uses. The 13-acre area is shown in Figure 5.2-2, *Farmland Area to be Converted to Preservation*.

There are two soil types in the 13-acre area mapped on the Web Soil Survey by the Natural Resources Conservation Service (NRCS 2012), as shown on Figure 5.2-3, *Soils Map*.

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- Myford Sandy Loam, thick surface, 2 to 9 percent slopes (soil map symbol 179). Myford Sandy Loam has a land capability classification of 3e, indicating that it has severe limitations that reduce the choice of plants or that require special conservation practices, or both; and that the main hazard to soil from intensive agriculture is erosion, unless close-growing plant cover is maintained.
- Sorrento Clay Loam, 0 to 2 percent slopes; the land capability classification of this soil type is 1, indicating that it has few limitations restricting its use.

Land Evaluation and Site Assessment (LESA) Analysis

The LESA Model consists of a Land Evaluation portion evaluating the capacity of the area studied for intensive agriculture; and a Site Assessment portion evaluating factors such as the size of the area; water availability; and the proportion of the surrounding area that is either agricultural land or land protected, such as with easements, for agriculture or for uses compatible with future agricultural use such as open space.

Land Evaluation Score

The Land Evaluation Score is based on two evaluations of suitability of soil for intensive agriculture: the Land Capability Classification (LCC) and the Storie Index. Storie indices for the soil types in the area are not provided in the Web Soil Survey maintained by the US Department of Agriculture. The LESA Model allows use of the LCC for the entire Land Evaluation score, 50 out of the 100 points of the total LESA score, where the Storie Index is not available. LCC scores were used in such manner here, yielding a Land Evaluation Score of 92.1, as shown on Table 5.2-3, *Land Evaluation Score*.

Table 5.2-3
Land Evaluation Score

<i>Soil Map Unit</i>	<i>Acres of Soil Unit on Site</i>	<i>Proportion of Site</i>	<i>LCC</i>	<i>LCC Rating</i>	<i>LCC Score</i>
179	3.4	0.26	3e	70	18.3
208	9.6	0.74	1	100	73.8
			LCC Total Score and Land Evaluation Score		92.1

Sources: NRCS 2012; FMMP 2011

Farmland Area to Be Converted to Preservation



- Project Boundary
- Farmland Area to be Converted to Preservation

0 1,000
Scale (Feet)



Source: DLRP 2011

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.2-2**

Soils Map



Farmland Area to Be Converted to Preservation

208 Sorrento Clay Loam, 0 to 2 Percent Slopes

179 Myford Sandy Loam, Thick Surface, 2 to 9 Percent Slopes

0 300
Scale (Feet)



Source: NRCS 2012

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 5.2-3**

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Site Assessment Score

Project Site Size

The project site size scores are assigned to various project site sizes according to the LCCs of the soils onsite. For example, the project site size score for a 40-acre site with LCC 1 to 2 soils is 80; with LCC 3 soils is 60; and with LCC 4 to 8 soils is 20. The project site size score is calculated for each soil type on a site; the highest score is then assigned to the entire site. The area studied includes 3.4 acres of soil with LCC 3e (type 179) and 9.6 acres of soil with LCC 1 (type 208). Areas smaller than 10 acres of either LCC 1 or LCC 3 soils are assigned project site size scores of zero; thus, the project site size score for the 13-acre area studied is zero.

Water Availability

Water is provided to the area studied by the Irvine Ranch Water District (IRWD). In 2010 IRWD provided 6,904 acre-feet (af) of recycled water for agricultural use in its service area through 61 metered accounts. IRWD expects its agricultural irrigation water deliveries to decrease to 2,314 af per year (afy) by 2035. Total IRWD recycled water supplies were 46,935 acre-feet per year (afy) in 2012, and are expected to increase to a maximum supply capability of 57,035 afy with supplies under development by 2032. Total demands for IRWD recycled water were 28,985 afy in 2012, with a reserve supply of 28,050 afy; and are forecast to gradually rise to 30,296 afy in 2032, with expected surpluses from 2015 through 2032 (IRWD 2012). IRWD has adequate recycled water supply to supply projected agricultural irrigation demands in its service area through 2032, and water availability is not expected to be a constraint on agricultural production on the area studied. Adequate supply of recycled water for agricultural use without constraints on agricultural production due to water supply or water quality was confirmed by Amy McNulty, IRWD Water Efficiency Supervisor. The nearest existing recycled water main to the 13-acre area is at Barranca Parkway (Herr 2012) about 1,200 feet south of the affected area; thus, location of recycled water mains is not a constraint to agricultural production onsite. The area was assigned a water availability score of 100, meaning that water supply is not a physical or economic restriction on agricultural production in the area during either drought or non-drought years.

Surrounding Agricultural Land

The Site Assessment Score includes two scores based on land within a zone approximately 0.25 mile wide surrounding the area studied, called the Zone of Interest (ZOI). The ZOI for the 13-acre area is 406 acres. Land in agricultural production in the ZOI was identified through two steps:

1. Land mapped as Important Farmland on the Orange County Important Farmland 2010 Map (DLRP 2011).
2. Aerial photographs of land identified in Step 1 were examined; any mapped Important Farmland within the ZOI developed with non-agricultural land uses was deducted from the acreage identified in Step 1.

Mapped farmland in the ZOI totaled 134 acres, or 33 percent of the ZOI. None of the mapped farmland was shown in aerial photographs to have been converted to non-agricultural land uses. A Surrounding Agricultural Land Score of zero is assigned when surrounding agricultural land is less than 40 percent of the area of the ZOI.

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Protected Agricultural Land

There are no Williamson Act contracts in effect on land within the ZOI (FMMP 2004). All land within the ZOI is planned for urban uses, with the exception of the Relocated Wildlife Corridor Feature, which cannot be used for agricultural uses. Therefore, the protected agricultural land score is zero.

Site Assessment Subscore

The Site Assessment subscore is shown below in Table 5.2-4, *Final LESA Score*.

Table 5.2-4
Final LESA Score

	Factor Scores	Factor Weight	Weighted Factor Scores
LE Factors			
Land Capability Classification (LCC) Score	92.15	0.5	46.08
LE Subtotal	Not applicable	Not applicable	46.08
SA Factors			
Project Size	0	0.15	0
Water Resource Availability	100	0.15	15
Surrounding Agricultural Land	0	0.15	0
Protected Agricultural land	0	0.05	0
SA Subtotal	Not applicable	Not applicable	15
		Final LESA Score	61.08

Factor weights are provided in the LESA Model (CDC 1997). All other data in this table are introduced in text above or are calculated from data in previous tables in this Section.

The LESA Model is considered to indicate a significant impact if the LE subscore and SA subscore are each 20 or greater.² As the SA subscore here is 15, and the LE subscore is 46.08, the conversion of the 13 acres of Prime Farmland to preservation uses under the 2012 Modified Project is considered to be a less than significant impact.

Mitigation Program and Net Impact

No additional mitigation measures are required as impacts on mapped farmland would be less than significant without additional mitigation.

² The LESA Model Instruction Manual (CDC 1997) contains a set of four rules for determining significance based on LESA scores:

1. Total LESA Score 0 to 39 points: Less than Significant.
2. Total LESA Score 40 to 59 points: Significant only if LE and SA subscores are each greater than or equal to 20 points.
3. Total LESA Score 60 to 79 points: Significant unless either LE or SA subscores are less than 20 points.
4. Total LESA Score 80 to 100 points: Significant.

The above four rules simplify down to the rule stated above in the text.

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IMPACT 5.2-2 WITH THE APPROVAL OF THE PROPOSED ZONE CHANGE, DEVELOPMENT PURSUANT TO THE 2012 MODIFIED PROJECT WOULD NOT CONFLICT WITH EXISTING ZONING OF THE 13 ACRES WITHIN THE PROPOSED PROJECT SITE. [IMPACT AG-2]

Location of Proposed Land Uses

The existing zoning designation on the 13-acre area studied under Impact 5.2-1 above is 1.1, Exclusive Agriculture. However, in order to use that 13-acre area for the Relocated Wildlife Corridor Feature, the 2012 Modified Project includes an application for a zone change on the 13-acre area to 1.4 Preservation. If the requested zone change is approved by the City of Irvine, the proposed use of the 13 acres under the 2012 Modified Project would not conflict with the zoning designation for the area, and no adverse impact would occur. In addition, use of the 13-acres for the Relocated Wildlife Corridor Feature would not affect any other agricultural land since the 13-acre site is surrounded by existing or planned urban uses.

Mitigation Program and Net Impact

No additional mitigation measures are required as impacts to agricultural resources would be less than significant without additional mitigation.

5.2.5 Cumulative Impacts

Most of the mapped Important Farmland in Orange County is concentrated in three areas:

- In, around, and north of the Proposed Project Site, extending northward through the western foothills of the Santa Ana Mountains to near the north boundary of Irvine; this concentration is entirely within Irvine.
- In the San Juan Creek valley in unincorporated Orange County east of San Juan Capistrano.
- On part of the Seal Beach Naval Weapons Station.

There were 8,420 acres of important farmland mapped in Orange County in 2008 by the Farmland Mapping and Monitoring Program (FMMP). In the two-year period from 2006-2008 alone, 29 percent, or 3,495, of the acres of Important Farmland mapped in Orange County in 2006 were converted to non-agricultural uses.

Intensive agriculture in Orange County is declining in viability, for reasons listed above in Section 5.2.1. Only one of the seven reasons, urbanization, is among the reasons for proposed development of the affected farmland within the Proposed Project Site. The 2012 Modified Project would convert 13 acres of Prime Farmland to residential use to provide additional housing needed near a large employment center, Irvine Spectrum, and near additional proposed job-generating land uses included in the 2012 Modified Project. In addition, this proposed housing would be 0.5 mile southeast of the Irvine Station; thus, development of housing on the affected farmland would conform to City, State, and regional policies supporting alternative transportation. The LESA model evaluates land within 0.25 mile of the Proposed Project Site, and thus involves a partial analysis of cumulative impacts on conversion of farmland to non-agricultural uses. In light of the establishment and implementation of the City's Agricultural Legacy

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Program, the use of 13 acres of prime farmland for preservation uses by the 2012 Modified Project would not be cumulatively considerable.

5.2.6 Applicable Mitigation Measures from the 2011 Certified EIR

Each mitigation measure specified in the 2011 Certified EIR and associated MMRP is set forth below. The mitigation measures shall apply to the 2012 Modified Project. This DSSEIR proposes to make certain modifications to the mitigation measures adopted by the City for the 2011 Approved Project. Modifications to the original mitigation measure are identified in ~~strikeout~~ text to indicate deletions and underlined to signify additions. The proposed changes to Mitigation Measure AG1 eliminates obsolete references to prior Standard Conditions. The proposed changes to Mitigation Measure AG1 would not change its substantive operation.

AG1 In order to encourage agriculture as an interim land use pending development on the project site by warning future residents that they are buying or renting a house adjacent to existing agricultural operations, ~~City Of Irvine Standard Discretionary Case Condition 8.4 and City Of Irvine Standard Subdivision Condition 3.4 regarding~~ disclosure statements shall be amended to include the following for subdivisions proposed adjacent to existing agricultural operations:

Prior to issuance of building permits, the applicant shall submit, and the Director of Community Development shall have approved, a completed occupancy disclosure form for the project. The approved disclosure form, along with its attachments, shall be included as part of the rental/lease agreement and as part of the sales literature for the project. The disclosure statement shall include the following information:

Continuation of agricultural operations adjacent to the site and their potential effects (spraying of pesticides, noise, dust, odor, etc.) on future residents or tenants.

AG2 Heritage and community service/educational farming operations shall be encouraged within utility easements and other lands. Heritage farming is defined as small- scale specialty farming operations that can be accommodated in an urban environment. An example would be the Edible Landscape project located adjacent to Harvard Avenue within the Edison right-of- way.

AG3 Future landowners and the City shall work cooperatively with farmers to minimize conflicts between agricultural operation and adjacent urban uses.

5.2.7 Level of Significance Before Additional Mitigation

Upon the continued implementation of regulatory requirements and mitigation measures previously adopted by the MMRP for the 2011 Approved Project, the following impacts of the 2012 Modified Project, as compared to the 2011 Approved Project, would be less than significant: 5.2-1 and 5.2-2.

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5.2.8 Additional Mitigation Measures for the 2012 Modified Project

No mitigation measures are required for the 2012 Modified Project because no significant impacts to agricultural resources are identified in this DSSEIR. The mitigation measures identified in the Certified EIR and associated MMRP for the 2011 Approved Project will reduce impacts on agricultural resources to a level of less than significant.

5.2.9 Level of Significance After Additional Mitigation

With implementation of the PPPs and mitigation measures outlined above, no new significant impacts to agricultural resources would occur beyond those identified in the 2011 Certified EIR.

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5. *Environmental Analysis*

5.1 *AESTHETICS*

This section of the DSSEIR describes the impacts of the 2012 Modified Project on existing land form and aesthetic characteristics, as compared to the 2011 Approved Project. The information in this section is based on the 2011 Certified EIR, field reconnaissance, review of the Proposed Project Site, aerial photographs, and topographical mapping.

5.1.1 *Environmental Setting*

Visual Setting

Scenic Features

The 2011 Certified EIR discussed the visual setting associated with the development of the 2011 Approved Project adjacent to various arterial highways and state and federal highways. None of the roadways discussed in the 2011 Certified EIR or this DSSEIR are designated County or State scenic highways; although Sand Canyon Avenue is designated as a highway with rural/natural character. The City's General Plan also designates the Interstate 5 (I-5) Freeway as an urban character Scenic Highway.

Generally, views of the former military base are from the surrounding highways. From these highways, a variety of land uses, structures, and facilities of differing ages, sizes, and architectural styles may be viewed. Though agricultural areas are adjacent to and within the base, the predominant features are associated with the military use of the former MCAS El Toro, including runways, aprons, hangars, warehouses, barracks housing, recreational facilities, abandoned golf course, single-family housing, offices, and commercial structures. However, since certification of the 2003 OCGP EIR, over 1,000 pre-existing buildings, structures, and ancillary facilities have been demolished; a portion of the pre-existing runway has been removed; and the Great Park Western Sector Development Plan (Phase 1) has been established on the western edge of the former military base.

The city of Lake Forest and the James A. Musick Branch Jail are to the southeast of the Proposed Project Site; the Irvine Spectrum abuts the eastern and southern boundaries; and existing and developing residential developments are located to the north and west. Further to the south are the residential areas of the cities of Laguna Woods and Laguna Hills. Portions of these communities are at higher elevations and therefore have panoramic views of the Proposed Project Site. However, because residences with views of the Proposed Project Site are at least two miles from the property, those residences are not impacted by existing light sources on the Proposed Project Site.

Landform

The topography of the Proposed Project Site is nearly flat and gently sloping down to the west-southwest with elevations ranging from 200 feet above mean sea level (msl) to 450 feet above msl. Existing Planning Area 30 is at the southeast margin of the Tustin plain with elevations ranging from about 260 to

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300 feet above msl. Existing Planning Area 51 includes some slopes of the Santa Ana foothills which reach elevations of about 750 feet above msl.

Light Sources

Parts of the Proposed Project Site are vacant land containing no light sources. Most of the developed area onsite is vacant and likewise does not contain light sources. There are a few buildings onsite with existing uses that have outdoor nighttime parking areas and security lighting. Additionally, nighttime light sources associated with the Orange County Great Park Western Sector Development (Phase 1) also exist.

Regulatory Setting

Local regulations, plans, and guidelines that are potentially applicable to the 2012 Modified Project are summarized below.

City of Irvine Municipal Code and Zoning Ordinance

The City of Irvine Municipal Code and Zoning Ordinance identify land use categories, development standards, and other general provisions that ensure consistency between the City's General Plan and proposed development projects. The following provisions from the City's Municipal Code and Zoning Ordinance help minimize aesthetics and light and glare impacts associated with new development projects and are relevant to the 2012 Modified Project.

- **Irvine Municipal Code, Title 5 (Planning), Division 9 (Building Regulations), Chapter 5 (Uniform Security Code).** The Uniform Security Code is designed, in part, to limit light and glare to the extent feasible while providing sufficient light in a safe manner. Section 5-9-517 (Special Nonresidential Building Provisions) of Chapter 5 discusses standards and requirements for lighting and glare in the City, including heights of lighting fixtures; design, installation, and maintenance of lighting fixtures; standards for new development of multifamily and non-residential development; lighting for parking areas; and sign illumination.
- **Irvine Zoning Ordinance, Chapter 3-16 (Lighting).** As required by Chapter 3-16 of the City's Zoning Ordinance, outdoor lighting is required to be designed and installed so that all direct rays are confined to the site and adjacent properties are protected from glare. The level of lighting on the site shall comply with the requirements of the City's Uniform Security Code (Irvine Municipal Code, Title 5, Division 9, Chapter 5).
- **Irvine Zoning Ordinance, Chapter 3-15 (Landscaping).** This chapter of the Zoning Ordinance outlines the minimum site landscaping and maintenance requirements. This chapter also outlines the screening and landscaping requirements for parking areas and parking structures.
- **Irvine Zoning Ordinance, Chapter 3-37 (Zoning District Land Use Regulations and Development Standards).** This chapter of the Zoning Ordinance outlines the regulations and development standards that are applicable to land uses proposed throughout the various planning areas of the City, including setbacks, building heights, landscaping, and maximum building intensity (IBC only).
- **Irvine Zoning Ordinance, Division 7 (Signs).** The intent of this division of the Zoning Ordinance, also known as the Sign Ordinance, is to promote and protect the public health, safety and welfare by regulating existing and proposed signs of all types within the City. This division outlines the standards and

regulations that apply to the design and installation of signage, including quantity, location, dimensions, lighting, etc.

5.1.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

- AE-1 Have a substantial adverse effect on a scenic vista.
- AE-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- AE-3 Substantially degrade the existing visual character or quality of the site and its surroundings.
- AE-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Chapter 8, *Impacts Found Not to Be Significant*, substantiates the City's determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR) that the following impacts of the 2012 Modified Project, as compared to the 2011 Approved Project, would be less than significant: AE-1 and AE-2. These impacts will not be addressed in the following analysis.

5.1.3 The 2011 Approved Project

Visual Character Impacts

The 2011 Certified EIR concluded that after compliance with the City's Zoning Ordinance, including City approval of architectural plans, landscape plans, and signage for each development to ensure new development is consistent with the City's Land Use Element, Circulation Element design policies, Zoning Ordinance, and the City's Landscape Ordinance and Guideline Manual, impacts to the visual character of the Approved Project Site and its surroundings due to development of the 2011 Approved Project would be less than significant.

Light and Glare Impacts

Mitigation Measure A-1 in the 2011 Certified EIR and associated mitigation monitoring and reporting program for the 2011 Approved Project (MMRP) requires the City Community Development Department to review lighting plans and signage plans for new development to ensure that there will be minimal light intrusion and spillover into adjacent residential areas. Mitigation Measure A-2 from the 2011 Certified EIR and associated MMRP for the 2011 Approved Project requires the Director of Community Development to ensure that mirrored and highly reflective surfaces are discouraged or, where proposed, are accompanied by a design-level glare impact analysis that demonstrates no adverse visual impairment to motorists or other visual nuisance occurs. Light and glare impacts of the 2011 Approved Project were determined to be less than significant after implementation of mitigation.

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5.1.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (“PPPs”) that apply to the 2012 Modified Project and that will help to reduce and avoid potential impacts related to aesthetics and light and glare:

- PPP 1-1 Prior to the issuance of building permits, the applicant shall demonstrate it has met the Irvine Uniform Security Code requirements for lighting by providing the below listed items for a complete review by the Police department. Failure to provide a complete lighting package will result in the delay of satisfaction of this condition (City Standard Condition 3.6).
- a. Electrical plan showing light fixture locations, type of light fixture, height of light fixture, and point-by-point photometric lighting analysis overlaid on the landscape plan with a tree legend. The photometric plan should only show those fixtures used to meet the Irvine Uniform Security Code requirements.
 - b. Corresponding fixture cut-sheets (specifications) of those lights used to meet the Irvine Uniform Security Code.
 - c. Site plan demonstrating that landscaping shall not be planted so as to obscure required light levels.
 - d. Site plans that are full-scale and legible.

Project Design Features

There are no project design features of the 2012 Modified Project that help to reduce and avoid potential impacts related to aesthetics and light and glare.

The following impact analysis addresses impacts that the Initial Study for the 2012 Modified Project disclosed as potentially significant impacts. The applicable potential impacts are identified in brackets after the impact statement.

IMPACT 5.1-1 DEVELOPMENT PURSUANT TO THE 2012 MODIFIED PROJECT WOULD CHANGE, BUT NOT SUBSTANTIALLY DEGRADE, THE VISUAL CHARACTER OF THE PROPOSED PROJECT SITE COMPARED TO LAND USES TO BE DEVELOPED UNDER THE 2011 APPROVED PROJECT [IMPACT AE-3].

Conversion of Non-Residential Land Use to Residential Use

The overall aesthetic impact of the 2012 Modified Project would be similar to the impact of the 2011 Approved Project. The Proposed Project Site would be developed with a mix of open space and recreational land uses as well as mostly low and medium-density residential, mixed-use development and research and development land uses. Although the 2012 Modified Project would convert existing non-residential entitlement to residential uses, the bulk and massing of the proposed structures would be

5. *Environmental Analysis*

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similar to those considered in the 2011 Certified EIR. In addition, the proposed residential uses would likely provide more opportunities for landscaping and parkland. Under the 2012 Modified Project, large non-residential buildings would be replaced by smaller residential structures with intervening landscaping. Further, the additional residential units will require dedication of neighborhood parkland which was not required with the non-residential development in the 2011 Approved Project.

Additionally, the visual impact of developing residential versus non-residential uses would be similar, as both land uses would involve the development of single- and multi-story buildings and structures, as well as other hardscape and landscape elements. Furthermore, the development of residential and non-residential land uses would be required to adhere to the land use regulations and standards outlined in Chapter 3-37 (Zoning District Land Use Regulations and Development Standards) of the Irvine Zoning Ordinance. This chapter of the Zoning Ordinance outlines the regulations and development standards that are applicable to land uses proposed throughout the various planning areas of the City, including setbacks, building heights, and landscaping. Landscaping of both residential and non-residential land uses would also be required to adhere to the landscaping and maintenance requirements outlined in Chapter 3-17 (Landscaping) of the Irvine Zoning Ordinance.

Therefore, the aesthetic impacts of the 2012 Modified Project's proposed conversion of non-residential uses to residential uses, as compared to the 2011 Approved Project, are not expected to be significant, and aesthetic impacts may improve with implementation of the proposed conversion.

Main Street Development

The 2012 Modified Project includes two options for the "Main Street" development along Trabuco Road east of "O" Street. Option 1 would involve Community Commercial and Multi-Use north of Trabuco Road with Residential south of Trabuco in District 1 South. Option 2 would involve Residential uses north of Trabuco Road with Community Commercial, Multi-Use, and Residential uses south of Trabuco Road in District 1 South. All of the areas proposed for development within District 1 North and South under the 2012 Modified Project were approved for development as part of the 2011 Approved Project, and the potential aesthetic impact of development within these districts on the Proposed Project Site was studied in the 2011 Certified EIR. The range of permitted land uses, and the permitted density, would also not exceed permitted land uses and density approved as part of the 2011 Approved Project. As a result, development of either Option 1 or Option 2 of the 2012 Modified Project would have similar aesthetic impacts as the 2011 Approved Project and would not be substantially greater than those described in the 2011 Certified EIR.

Development of Additional Acreage

The 2012 Modified Project proposes development of two additional areas not previously planned for vertical development in the 2011 Approved Project: 1) the TCA Parcel; and, 2) 13 acres within District 6 (currently designated as District 9) which is currently zoned 1.1 Exclusive Agriculture. The TCA parcel is a remainder parcel associated with construction of the SR-133 Freeway. Since it is a remainder parcel, it is not a large, wide expanse of undeveloped land and is not highly visible scenically due to its location adjacent to the SR-133 Freeway. It is currently vacant and covered by very little vegetation other than non-native grasses. As a result, it does not exhibit any visual resources and would not result in a significant aesthetic impact, if developed.

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The 13 acres located in District 6 is currently in agricultural production and surrounded by industrial and warehouse uses to the north and east, the A.T. & S.F. rail line to the south and Marine Way to the west. Implementation of the 2012 Modified Project would convert 13-acres of agricultural land to preservation uses and associated landscaping. For impacts related to conversion of agricultural uses to non-agricultural uses refer to Section 5.2, *Agriculture and Forestry Resources*, of this DSSEIR. While the existing agricultural uses provide some visual character, they are surrounded by urban uses including industrial/warehouse uses, a rail line, and an existing road. Additionally, the 2012 Modified Project proposes to convert this area to 1.4 Preservation for the Relocated Wildlife Corridor Feature, which will involve landscaping of the area with trees and vegetation. Therefore, implementation of the 2012 Modified Project would improve the aesthetic value of this portion of the Proposed Project Site. Accordingly, the conversion of 13-acres of agricultural land to preservation uses would not be a significant aesthetic impact.

Comparison to 2011 Certified EIR

Impacts of the 2011 Approved Project on the visual character of the Approved Project Site and its surroundings were determined to be less than significant assuming compliance with existing City ordinances and policies. The net incremental impact of the 2012 Modified Project on the visual character of the Proposed Project Site and its surroundings would also be less than significant, and the overall impact is similar to that analyzed in the 2011 Certified EIR.

Mitigation Program and Net Impact

No additional mitigation measures are introduced here in this DSSEIR as net impacts on visual character would be less than significant.

IMPACT 5.1-2 DEVELOPMENT PURSUANT TO THE 2012 MODIFIED PROJECT MAY DECREASE SOURCES OF LIGHT AND GLARE COMPARED TO LAND USES PROPOSED IN THE 2011 APPROVED PROJECT [IMPACT AE-4].

Conversion of Non-Residential Land Use to Residential

The 2012 Modified Project would convert a portion of the existing non-residential entitlement within Districts 2, 3, 5 and 6 (including existing District 9) to residential uses. Outdoor lighting on non-residential land uses typically includes lighted building faces for advertising/visibility purposes, parking lot lighting, and signage lighting. By contrast, outdoor nighttime lighting in residential areas is generally limited to security lighting and street lighting. Non-residential structures can have exterior surfaces that generate substantial glare. In contrast, residential dwelling units are generally built using low-glare materials. Therefore, the 2012 Modified Project's conversion of some non-residential uses to residential uses would likely reduce the overall nighttime lighting resulting from the 2012 Modified Project as compared to the 2011 Approved Project. The optional conversion of 535,000 square feet of non-residential Multi-Use intensity to residential uses would further increase this overall reduction.

As with the 2011 Approved Project, implementation of the land uses associated with the 2012 Modified Project would be required to adhere to the provision of the Uniform Security Code (Chapter 5 of the Irvine Municipal Code) and Chapter 3-16 (Lighting) of the City's Zoning Ordinance. The Uniform Security Code outlines standards and requirements for lighting and glare in the City, including heights of lighting fixtures; design, installation, and maintenance of lighting fixtures; standards for new

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development of multifamily and nonresidential development; lighting for parking areas; and sign illumination. As required by Chapter 3-16 of the City's Zoning Ordinance, outdoor lighting is required to be designed and installed so that all direct rays are confined to the site and adjacent properties are protected from glare.

Additionally, development associated with the 2012 Modified Project would be required to implement the light and glare mitigation measures of the 2011 Certified EIR and associated MMRP, which are reproduced at the end of this Section. For example, as outlined in Mitigation Measure A-1, prior to issuance of grading permits, lighting plans and signage plans for new development shall be reviewed by the Community Development Department to ensure that there will be minimal light intrusion and spillover into adjacent residential areas. Also, as outlined in Mitigation Measure A-2, prior to the issuance of grading permits, and during the master plan review process for future development in the project area, the Director of Community Development shall ensure that mirrored and highly reflective surfaces are discouraged or, where proposed, shall be accompanied by a design-level glare impact analysis that demonstrates no adverse visual impairment to motorists or other visual nuisance occurs.

Furthermore, lighting of signage associated with non-residential land uses would be required to adhere to the provisions of the City's Sign Ordinance, which outlines the standards and regulations that apply to the design and installation of signage, including quantity, location, dimensions, lighting, etc.

Therefore, there are no new impacts, as compared to those identified in the 2011 Certified EIR, related to nighttime lighting and glare associated with the 2012 Modified Project's conversion of non-residential uses to residential uses.

Main Street Development

The 2012 Modified Project includes two options for the "Main Street" development along Trabuco Road east of "O" Street. Option 1 would involve Community Commercial and Multi-Use north of Trabuco Road with Residential south of Trabuco in District 1 South. Option 2 would involve Residential uses north of Trabuco Road with Community Commercial, Multi-Use, and Residential uses south of Trabuco Road in District 1 South. Although Options 1 and 2 involve relocation of residential and non-residential uses, the building heights, setback requirements, and landscaping would be similar under either option and result in similar aesthetic impacts. All of the areas proposed for development within District 1 North and South under the 2012 Modified Project were approved for development as part of the 2011 Approved Project, and the potential impact of development within these districts on the Proposed Project Site was studied in the 2011 Certified EIR. As a result, development of either Option 1 or Option 2 would have similar light and glare impacts and would not be greater than those identified in the 2011 Certified EIR.

Development of Additional Acreage

The 2012 Modified Project proposes development of two additional areas not previously planned for vertical development in the 2011 Approved Project: 1) the TCA Parcel; and, 2) 13 acres within District 6 (currently designated as District 9) which are currently zoned 1.1 Exclusive Agriculture.

Development of the TCA Parcel would introduce new light sources within the area, since it is currently undeveloped. The 13 acres within District 6 (currently designated as District 9) will not introduce new light sources since the 2012 Modified Project proposes to convert this area to 1.4 Preservation for the Relocated Wildlife Corridor Feature. Further, both areas are surrounded by existing or planned

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development. The amount of light or glare would not be substantially different than existing development surrounding the Proposed Project Site. Additionally, as noted above, as with the 2011 Approved Project, implementation of the land uses associated with the 2012 Modified Project would be required to adhere to the provisions of the Uniform Security Code (Chapter 5 of the Irvine Municipal Code) and Chapter 3-16 (Lighting) of the City's Zoning Ordinance, and would be required to implement the light and glare mitigation measures of the 2011 Certified EIR and associated MMRP, which are reproduced at the end of this Section. Furthermore, lighting of signage associated with non-residential land use would be required to adhere to the provisions of the City's Sign Ordinance, which outlines the standards and regulations that apply to the design and installation of signage, including quantity, location, dimensions, lighting, etc.

Therefore, development of these parcels would not result in light and glare impacts substantially greater than those identified in the 2011 Certified EIR.

Relocation of the Approved Wildlife Corridor Feature

As discussed in Chapter 3, *Project Description*, the 2012 Modified Project proposes to relocate a 132-acre portion of the Approved Wildlife Corridor Feature, currently located between Irvine Boulevard and the SCRRA track, to an area located to the east adjacent to the existing Borrego Canyon Channel (the "Relocated Wildlife Corridor Feature"). The Relocated Wildlife Corridor Feature shall still consist of approximately 132 acres and will be zoned 1.4 Preservation. To assess potential light and glare impacts on the Relocated Wildlife Corridor Feature, light measurements were taken at eight locations along the Proposed Project Site's eastern boundary along Borrego Canyon Channel. Although a number of industrial uses are located east of the Borrego Canyon Channel, including lit parking areas, due to the distance from these uses, measured light levels were only between 0.03 and 0.14 foot candles. These levels are very low - for reference, light levels from a full moon are approximately 0.5 foot candles. As a result, light and glare from adjacent industrial uses would not impact the Relocated Wildlife Corridor Feature at its proposed location.

Comparison to the 2011 Certified EIR

Light and glare impacts of the 2011 Approved Project on the 2011 Approved Project Site and its surroundings were determined to be less than significant after implementation of Mitigation Measures A-1 and A-2 from the 2011 Certified EIR and associated MMRP. The net incremental impact of the 2012 Modified Project relating to light and glare would be less than significant, and the overall impact is similar to that analyzed in the 2011 Certified EIR.

Mitigation Program and Net Impact

No additional mitigation measures are introduced in this DSSEIR as net light and glare impacts would be less than significant with the mitigation measures identified in the 2011 Certified EIR and associated MMRP.

5.1.5 *Cumulative Impacts*

The redistribution of various land uses under the 2012 Modified Project, in conjunction with other cumulative development in accordance with the City's General Plan buildout, could cause areawide aesthetic and light and glare impacts. Some cumulative developments would develop vacant land with urban land uses, while others would redevelop or re-use developed sites. Cumulative developments would

result in urbanizing some of the vacant land in the area, and changes to the intensity and/or type of development on some currently developed land.

Aesthetic and light and glare impacts of the development of parts of the Proposed Project Site were analyzed in the 2011 Certified EIR and this DSSEIR. As with the 2011 Approved Project, the 2012 Modified Project would also create a cohesive community of residential and other support uses, in turn contributing to the development of a high quality, master-planned urban neighborhood. Additionally, as with the 2012 Modified Project, future cumulative development projects would be subject to compliance with the local and regional plans, programs and policies reviewed in this section, in order to ensure orderly urban development. Net incremental impacts of the 2012 Modified Project in combination with impacts of cumulative development in accordance with the City's General Plan would not result in substantial cumulative impacts concerning visual character or light and glare.

5.1.6 Applicable Mitigation Measures from the 2011 Certified EIR

Each mitigation measure related to aesthetics that was specified in the 2011 Certified EIR is set forth below. Mitigation Measures A-1 and A-2 from the 2011 Certified EIR and associated MMRP are incorporated into the 2012 Modified Project.

- A-1 Prior to issuance of building permits, lighting plans and signage plans for residential or non-residential development shall be reviewed by the Community Development Department to ensure that minimal light intrusion and spillover into adjacent residential areas occurs.
- A-2 Prior to the issuance of building permits for residential and non-residential development, and during the master plan review process for future development in the project area, the Director of Community Development shall ensure that mirrored and highly reflective surfaces are discouraged or, where proposed, shall be accompanied by a design-level glare impact analysis that demonstrates no adverse visual impairment to motorists or other visual nuisance occurs.

5.1.7 Level of Significance Before Additional Mitigation

Upon implementation of regulatory requirements, PPPs, and mitigation measures previously adopted by the MMRP for the 2011 Approved Project, the following impacts of the 2012 Modified Project would be less than significant: 5.1-1 and 5.1-2.

5.1.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are required because the mitigation measures identified in the 2011 Certified EIR and associated MMRP would reduce aesthetic impacts of the 2012 Modified Project to a level of less than significant.

5.1.9 Level of Significance After Additional Mitigation

With implementation of the existing regulations, PPPs and mitigation measures outlined above from the 2011 Approved Project, potential impacts of the 2012 Modified Project associated with visual character and light and glare would be reduced to a level that is less than significant. Therefore, no significant impacts relating to aesthetics or light and glare have been identified.

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4. *Environmental Setting*

4.1 *INTRODUCTION*

The 2012 Modified Project is located in portions of City of Irvine ("City") Existing Planning Area (PA) 51 and in Existing PA 30, both part of the former Marine Corps Air Station, El Toro, now closed and subject to civilian reuse. As used in this DSSEIR, the term "Proposed Project Site" refers to and encompasses; 1) the Heritage Fields Development, also known as the Great Park Neighborhoods, consisting of nine existing Development Districts; 2) an 11 acre parcel currently owned by the Transportation Corridor Agencies (TCA) located adjacent to the SR-133 Freeway between Trabuco Road and Irvine Boulevard (the "TCA Property"); 3) Lot D, Lot E, and Lot F as depicted on 2nd Amended Vesting Tentative Tract Map 17008 currently zoned 3.2 Transit Oriented Development" within Districts 2 and 3 (together, the "City Parcels"); and 4) approximately 132 acres owned by the City and zoned 1.4 Preservation that generally extends from Irvine Boulevard to the SCRRA rail lines, as depicted in Figure 3-5 and that is part of the "Approved Wildlife Corridor Feature"; and 5) a portion of the Great Park known as the "Sports Park District," all of which are located within the areas designated as Existing PA 30 and Existing PA 51 in the City's General Plan. The location of the 2011 Approved Project included Existing PA 30 and Existing PA 51 in their entirety (herein referred to as the "Approved Project Site"). Because the 2012 Modified Project is located within, but does not include all of, the Approved Project Site, this DSSEIR will specify when the Approved Project Site for the 2011 Approved Project is being referenced. Pursuant to CEQA and the CEQA Guidelines, the purpose of this section is to provide a "description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, from both a local and a regional perspective." The environmental setting provides a set of baseline physical conditions from which the City, as lead agency, will determine the significance of environmental impacts of the 2012 Modified Project. Because this is a Supplemental EIR, the baseline used for the analyses in this DSSEIR is the 2011 Approved Project, which includes the activities analyzed in the 2011 Certified EIR, which includes Addendum No. 8. Please refer to Section 2.1, *Purpose of The Environmental Impact Report*, for a discussion of the baseline used for this DSSEIR.

4.2 *REGIONAL ENVIRONMENTAL SETTING*

4.2.1 *Regional Location*

The Orange County Great Park ("Great Park") is located in the south/central part of Orange County in Irvine (see Figure 3-1, *Regional Location*). Orange County is bordered by the Pacific Ocean to the west, Los Angeles County to the north and northwest, San Bernardino County to the northeast, Riverside County to the east, and San Diego County to the south. Orange County comprises 798 square miles, with approximately 40 miles of coastline and extending inland approximately 20 miles.

The natural topography of Orange County is a combination of mountains, hills, flatlands, and shoreline. Orange County lies predominantly on an alluvial plain, which is generally less than 300 feet in elevation in the west and central section. The western portion of the County is made up of a series of broad sloping plains (Downey and Tustin Plains) formed of alluvium transported from the mountains by the Santa Ana

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River, Santiago Creek, and other local streams. Several low-lying mesas interrupt the plain along the northern coast. Orange County is partly enclosed by the Puente and Chino Hills to the east. The Puente and Chino Hills, which identify the northern limit of the plain, extend for 22 miles and reach a peak height of 1,780 feet. To the east and southeast of the plain are the Santa Ana Mountains, which have a peak height of 5,691 feet.

4.2.2 Regional Climate

The climate of Orange County is generally temperate. The average monthly high temperatures range from about 52°F in the coastal areas in January to 86°F in the inland areas of the coastal plain in August. The average annual rainfall across the County is 14 inches, with most rain typically occurring in the winter months. Rainfall also exhibits characteristically wide variations annually, from a low of 3.6 inches in 1961 to a high of 32.1 inches in 1940.

4.2.3 Regional Planning Considerations

Air Quality Management Plan

An air basin generally has similar meteorological and geographic conditions throughout. California is geographically divided into 15 air basins, and Irvine is located in the South Coast Air Basin (“SoCAB”). This air basin contains the largest urban area in the western United States. It is a 6,600-square-mile coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SoCAB includes all of the non-desert portions of San Bernardino, Los Angeles (non–Antelope Valley portion), and Riverside Counties, and all of Orange County.

The South Coast Air Quality Management District (“SCAQMD”) and the Southern California Association of Governments (“SCAG”) are responsible for formulating and implementing the Air Quality Management Plan (“AQMP”) for the SoCAB, a comprehensive plan that includes control strategies for emissions from stationary and area sources, as well as from on-road and off-road mobile sources. Every three years since 1979, SCAQMD has prepared a new AQMP, with updates to the previous plan and a 20-year horizon. The most recent AQMP iteration was adopted by SCAQMD on June 1, 2007 (“2007 AQMP”). The 2007 AQMP incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. It proposes attainment demonstration of the federal fine particulate matter (“PM_{2.5}”) standards through a more focused control of sulfur oxides (“SO_x”), directly emitted PM_{2.5}, and nitrogen oxides (“NO_x”) supplemented with volatile organic compounds (“VOC”) by 2015. The eight-hour ozone control strategy set forth in the 2007 AQMP builds upon the PM_{2.5} strategy, augmented with additional NO_x and VOC reductions to meet the federal standard by 2024, assuming a bump-up (extended attainment date) is obtained.

The AQMP acts as local guidance related to California’s State Implementation Plan, which provides the framework for air quality basins to achieve attainment of the State and federal ambient air quality standards. Areas that meet ambient air quality standards are classified as attainment areas; areas that do not meet these standards are in nonattainment. Severity classifications for ozone nonattainment are marginal, moderate, serious, severe, and extreme. The 2012 Modified Project’s consistency with the applicable policies and standards of the 2007 AQMP is analyzed in detail in Section 5.3, *Air Quality*, of this DSSEIR.

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Southern California Association of Governments

Orange County and the City are at the western edge of a six-county metropolitan region composed of Orange, Los Angeles, Ventura, Riverside, San Bernardino and Imperial Counties. SCAG is the federally recognized Metropolitan Planning Organization (“MPO”) for the region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and State law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the Southern California region’s MPO, SCAG cooperates with SCAQMD, the California Department of Transportation (“Caltrans”), and other agencies in preparing regional planning documents. Orange County and its jurisdictions constitute the Orange County Subregion of the SCAG region. The Orange County Subregion is governed by the Orange County Council of Governments (“OCCOG”). SCAG has developed a variety of plans to achieve specific regional objectives. The plans most applicable to the 2012 Modified Project are discussed below.

Regional Comprehensive Plan

The 2008 Regional Comprehensive Plan (“RCP”) is a major advisory plan prepared by SCAG that addresses important regional issues such as housing, traffic/transportation, water, and air quality. The RCP serves as an advisory document to local agencies in Southern California for their information and voluntary use in the preparation of local plans and the handling of local issues of regional significance.

The RCP presents a vision of how Southern California can balance resource conservation, economic vitality, and quality of life. The RCP identifies voluntary best practices to approach growth and infrastructure challenges in an integrated and comprehensive way. It also includes goals and outcomes to measure progress toward a more sustainable region. The 2012 Modified Project’s consistency with the advisory policies of the 2008 RCP is analyzed in detail in Section 5.7, *Land Use and Planning*, of this DSSEIR.

Regional Transportation Plan

On April 4, 2012, SCAG adopted the 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) to help coordinate development of the region’s transportation improvements. The RTP is a long-range transportation plan that is developed and updated by SCAG every four years. The RTP provides a vision for transportation investments throughout the region. Using growth forecasts and economic trends that project out over a 20-year period, the RTP considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address our mobility needs.

The 2012 Modified Project’s consistency with the applicable 2012 RTP policies is analyzed in detail in Section 5.7, *Land Use and Planning*, of this DSSEIR.

Compass Blueprint

In 2004, SCAG adopted the Compass Blueprint 2% Strategy (“2% Strategy”), which is the part of SCAG’s 2004 regional growth forecast policy that attempts to reduce emissions and increase mobility through strategic land use changes. Through extensive public participation and land use and transportation

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modeling and analysis, the 2% Strategy has resulted in a plan that identifies strategic growth opportunity areas ("2% Strategy Opportunity Areas"). These areas amount to roughly 2 percent of the land area in the six-county SCAG region. These are the areas where the 2% Strategy will help cities and counties reap the maximum benefits from regional planning implemented in cooperation and partnership with the local community. The 2% Strategy is a guideline for how and where the vision for Southern California's future can be implemented toward improving measures of mobility, livability, prosperity, and sustainability for local neighborhoods and their residents. Goals for the 2% Strategy Opportunity Areas include locating new housing near existing jobs and new jobs near existing housing, encouraging in-fill development, promoting development with a mix of uses, creating walkable communities, providing a mix of housing types, and focusing development in urban areas. The 2012 Modified Project's consistency with the 2% Strategy guidelines is addressed in detail in Section 5.7, *Land Use and Planning*, of this DSSEIR.

4.3 LOCAL ENVIRONMENTAL SETTING

Location and Land Use

Irvine occupies 69.7 square miles in south/central Orange County. There are seven cities bordering Irvine: Tustin to the north, Lake Forest to the east, Laguna Hills and Laguna Woods to the southeast, Newport Beach to the south, Santa Ana to the northwest, and Costa Mesa to the west. Unincorporated Orange County land is located north of the Irvine. The Great Park, encompassing Existing PAs 30 and 51, is northeast of the freeway junction of Interstate 5 (I-5) and Interstate 405 (I-405), within Irvine. Figure 3-1, *Regional Location*, depicts the location of the Proposed Project Site in a regional context and Figure 3-2, *Local Vicinity*, shows its local context. The boundaries of Existing PA 51 generally include the Eastern Transportation Corridor to the west, the Foothill Transportation Corridor to the east, the SCRRA rail lines to the south, and Irvine Boulevard and the storm water channel near Alton Parkway to the north. Existing PA 51 abuts Existing PAs 30 and 32 to the south, Irvine Spectrum 2 - PA 35 to the east, and PAs 9 and 40 to the west. The boundaries of Existing PA 30 generally include Interstate 5 (Santa Ana Freeway) to the south, the SCRRA rail lines to the north, and the Irvine Spectrum to the east and west (Irvine Spectrum 2-PA 35, and Irvine Spectrum 3 - PA 32).

Major roadways bordering the Proposed Project Site are Sand Canyon Avenue to the west, Portola Parkway and Irvine Boulevard to the north, and Alton Parkway to the east. The Irvine Station, a major multimodal transit center linking Orange County Transportation Authority ("OCTA") bus, Metrolink commuter rail, and AMTRAK rail services, is located adjacent to the SCRRA rails, which traverse the Proposed Project Site and separate Existing PAs 30 and 51. Surrounding the Proposed Project Site are residential and nonresidential uses to the north and west, open space to the northeast, and nonresidential and mixed land uses to the east and southeast within Lake Forest and Irvine. An aerial photograph of the Proposed Project Site is shown in Figure 3-3.

The existing facilities and uses within the Proposed Project Site include agricultural operations and RV storage. The 2011 Certified EIR also described interim activities that might occur within Existing PAs 30 and 51, including short-term use of the land or existing buildings on-site. Currently, some of the existing buildings on-site are occupied by offices of the Orange County Great Park Corporation ("GPC"). The other current tenant is the Orange County Great Park Western Sector Development. Finally, a portion of the pre-existing runway has been removed within the southern portion of Existing PA 51.

Ownership of Existing PAs 30 and 51 has changed since certification of the 2003 OCGP EIR, including the transfer by fee title conveyance or by Lease in Furtherance of Conveyance ("LIFOC") of certain

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parcels to the Federal Aviation Administration (“FAA”), City of Irvine, County of Orange, and Heritage Fields El Toro, LLC by the Department of the Navy (“DON”). The DON LIFOC properties are currently undergoing remediation of residual contamination from previous military activities on the site.

Surrounding Land Uses

The Proposed Project Site is generally bounded by the Woodbury and Woodbury East residential developments to the west, the Portola Springs residential development and the FAA property with the Natural Community Conservation Plan/Habitat Conservation Plan (“NCCP/HCP”) overlay to the north, the Irvine Spectrum to the south, and the Irvine Spectrum 2 industrial/business park area and general industrial/research and development uses as well as the City of Lake Forest to the east. Other nearby local jurisdictions include the cities of Laguna Hills, Laguna Niguel, Laguna Woods, Mission Viejo, Aliso Viejo, and Tustin.

4.4 ENVIRONMENTAL RESOURCES AND INFRASTRUCTURE

Aesthetics

The 2011 Certified EIR discussed the Approved Project Site's visual setting associated with its location adjacent to various arterial highways and State and federal highways. As noted above, the Proposed Project Site is located within the Approved Project Site. None of the roadways adjacent to the Proposed Project Site are designated as a County or State scenic highway, although Sand Canyon Avenue is designated as a highway with rural/natural character. The City's General Plan also designates I-5 as an urban character Scenic Highway.

Generally, views of the Proposed Project Site are from the surrounding highways. From these highways, a variety of land uses, structures, and facilities of differing ages, sizes, and architectural styles may be viewed. Though agricultural areas are adjacent to and within the Proposed Project Site, the predominant features visible on the site are associated with the former military use of the base, including runways, aprons, hangars, warehouses, barracks housing, recreational facilities, former golf course, vacant single-family housing, vacant offices, and vacant commercial structures, and the Orange County Great Park Western Sector Development Plan (Phase 1). Since the 2003 OCGP EIR was certified, the majority of the structures on-site that were associated with the site's prior military activities have been demolished, a portion of the pre-existing runway has been removed, and the former golf course has been closed. These changes were anticipated and were analyzed in the 2011 Certified EIR.

The city of Lake Forest and the James A. Musick Branch Jail are located to the southeast of the Proposed Project Site, the Irvine Spectrum abuts the Proposed Project Site along the eastern and southern boundaries, and existing and developing residential developments are to the north and west. Further to the south are the residential areas of the cities of Laguna Woods and Laguna Hills. These communities are at higher elevations and therefore have panoramic views of the Proposed Project Site.

A description of the 2012 Modified Project's aesthetics impacts as compared to the 2011 Approved Project is included in Section 5.1, *Aesthetics*, of this DSSEIR.

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Agricultural Resources

Conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance was found to be a significant and unavoidable impact in the 2003 OCGP EIR. However, as discussed in more detail in Section 5.2, *Agriculture and Forestry Resources*, of Addendum No. 5 concluded that the City's General Plan Objective L-10 established the Irvine Agricultural Legacy Program to mitigate the loss of existing agricultural land throughout Irvine where development under the General Plan is designated to occur, and concluded that the impact was no longer significant, in part because farmland was being provided elsewhere in the City. Addendum No. 5 further stated that the loss of the 173 acres of Prime Farmland in PAZ 1 would not be a significant impact because none of the acres were being used to grow crops. The 2010 Farmland Mitigation Mapping Program shows the majority of the Proposed Project Site as Urban and Built-Up Land and Other Land, although portions are designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Grazing Land. (California Department of Conservation, 2010)

A description of the 2012 Modified Project's agricultural resources impacts as compared to the 2011 Approved Project is included in Section 5.2, *Agriculture and Forestry Resources*, of this DSSEIR.

Air Quality and Greenhouse Gas Emissions

The Proposed Project Site is located in the western portion of the SoCAB. The climate in the SoCAB is mild, tempered by cool ocean breezes. Temperatures are normally mild (62 to 72 degrees Fahrenheit (°F)), with rare extremes above 100°F or below freezing (32°F). The climate of Orange County is classified as temperate. In January, the average high temperature is about 69°F and the low temperature averages about 47°F. In August, the average high is about 86°F and the low averages about 64°F. (Western Regional Climate Center, 2012) Precipitation is typically 9 to 15 inches annually in the SoCAB. The average annual rainfall across Orange County is 14 inches, the vast majority of which occurs between September and April. The County's rainfall also exhibits characteristically wide variations annually, from a low of 3.6 inches in 1961 to a high of 32.1 inches in 1940. (Western Regional Climate Center, 2012)

Pollutants originating in Orange County are transported by the daytime onshore air flow, where they react to form ozone some distance from where the primary pollutants are emitted. The SoCAB is a "nonattainment" area for ozone (O₃) and particulate matters (PM₁₀ and PM_{2.5}) under both the federal and California ambient air quality standards ("AAQS"). In addition, the SoCAB was proposed in 2010 to be designated as nonattainment for oxides of nitrogen (NO_x) (entire basin) under the new California AAQS and lead (Pb) (Los Angeles County only) under the new federal AAQS. Nonattainment refers to the fact that the region exceeds the federal and State AAQS. (SCAQMD, 2007) An air quality analysis was performed for the 2012 Modified Project and the results are discussed in Section 5.3, *Air Quality*, of this DSSEIR.

California is the second largest emitter of GHG in the United States, only surpassed by Texas, and the tenth largest GHG emitter in the world (CEC 2005). However, because of more stringent air emission regulations, in 2001 California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO₂ emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services) (CEC 2006). In 2004, California produced 492 million metric tons ("MMTons") of CO₂-equivalent ("CO₂e") GHG emissions, of which 81 percent were CO₂ from the combustion of fossil fuels, 2.8 percent were from other sources of CO₂, 5.7 percent were from methane, and 6.8 percent were from N₂O (CEC 2006). The remaining 2.9 percent of GHG emissions were from

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High Global Warming Potential gases, which include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (CEC 2006).

CO₂ emissions from human activities make up 84 percent of the total GHG emissions (CEC 2006). California's transportation sector is the single largest generator of GHG emissions, producing 40.7 percent of the state's total emissions (CEC 2006). Electricity consumption is the second largest source, comprising 22.2 percent. While out-of-state electricity generation comprises 22 to 32 percent of California's total electricity supply, it contributes 39 to 57 percent of the GHG emissions associated with electricity consumption in the state (CEC 2006). Industrial activities are California's third largest source of GHG emissions, comprising 20.5 percent of state's total emission (CEC 2006). Other major sources of GHG emissions include mineral production, waste combustion and land use, and forestry changes. Agriculture, forestry, commercial, and residential activities comprise the balance of California's greenhouse gas emissions (CEC 2006).

A description of the 2012 Modified Project's air quality and greenhouse gas impacts as compared to the 2011 Approved Project is included in Section 5.3, *Air Quality*, and Section 5.4, *Greenhouse Gas Emissions*, of this DSSEIR.

Biological Resources

The 2011 Certified EIR described the biological resources that exist within Existing PAs 30 and 51, including a 995-acre parcel of land in the easternmost portion of Existing PA 51 retained in federal ownership and designated as both a "habitat reserve" and a part of the Orange County Central-Coastal Sub-region NCCP/HCP. The areas outside the habitat reserve were described in the 2011 Certified EIR as: 1) providing minimal native or undisturbed habitat, and, 2) consisting of agricultural, ornamental, and domestic landscapes.

The 2011 Certified EIR identified nine vegetative communities within the Approved Project Site, including Venturan-Diegan sage scrub, southern cactus scrub, chaparral, woodland, riparian scrub, grassland, open water, agriculture, and predominately disturbed or developed areas. Several sensitive plant species and a large number of mature trees were also identified as potentially occurring within the Approved Project Site. The sensitive plant species potentially occurring in Existing PAs 30 and 51 include the southern tarplant, Palmer's grapplinghook, many-stemmed dudleya, Coulter's Matilija poppy, Catalina mariposa lily, and intermediate mariposa lily. The 2011 Certified EIR also noted the Coulter's saltbush, Laguna Beach dudleya, San Fernando Valley spineflower, and the Lewis's evening-primrose as having a moderate potential for occurrence. Species with a low potential for occurrence include the Los Angeles sunflower, south coast saltscale, Santa Monica Mountains dudleya, heart-leafed pitcher sage, coast wooly-heads, slender-horned spineflower, Santa Barbara morning glory, tecate cypress, and salt spring checkerbloom.

Since certification of the 2003 OCGP EIR, the Project Applicant has received a Section 401 Water Quality Certification from the California Regional Water Quality Control Board – Santa Ana Region, a Section 404 Permit from the Army Corps of Engineers (ACOE), and a 1602 Streambed Alteration Agreement from the California Department of Fish and Game (CDFG). In addition, the Final Habitat Mitigation and Monitoring Plan (HMMP) was approved by CDFG in December 2011 and ACOE in February 2012.

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Chapter 8, *Impacts Found Not To Be Significant*, of this DSSEIR discusses why it was concluded that Biological Resources impacts of the 2012 Modified Project did not need to be analyzed in detail in this DSSEIR.

Cultural and Paleontological Resources

This discussion of cultural resources includes archaeological and historical resources. The 2011 Certified EIR reported the presence of ten prehistoric archaeological sites and eight isolated prehistoric artifacts that have been recorded in the northeastern habitat preserve portions of Existing PA 51. These sites are located generally on the ridges between Borrego Canyon Channel and the Agua Chinon Wash.

The former MCAS El Toro was surveyed to determine whether any of the structures would be eligible for the National Register. Generally, a structure that has achieved significance in the past 50 years is not considered eligible for the National Register unless it is of exceptional importance. The evaluation was expanded to include eligibility under the Legacy Cold War Project (Public Law No. 101-511, Section 8120). Portions of Existing PAs 30 and 51 (the former MCAS El Toro) were established during WWII, and no structure earlier than this period is located at the former MCAS El Toro. Therefore, the historical significance of any structures at the former military base would be as part of the Cold War Legacy. Surveys conducted by the US Army Corps of Engineers and the DON in conjunction with the base's closure concluded there were no structures eligible for designation as Cold War Legacy or for inclusion in the National Register of Historic Places.

The 2011 Certified EIR reported that a majority of Existing PAs 30 and 51 is located on the Tustin Plain, a coastal alluvial plain. Alluvium from the Late Pleistocene to Holocene Epochs (approximately 2 million to 11,000 years ago) immediately underlies the majority of the area surrounding the Proposed Project Site, including the part occupying the coastal plain and washes in the eastern portion of Existing PA 51. The Pleistocene Alluvium formation is widespread and believed to extend to depths of 1,000 feet under Existing PA 30. A deposit of Pleistocene terrestrial vertebrates was recovered during excavation of a flood control basin four miles from Existing PA 30; thus, it is possible that similar beds underlie Existing PA 30 (see 2003 OCGP FEIR p. 5.10-2), though no significant impacts were found in the 2011 Certified EIR.

The eastern portion of Existing PA 51 is located in the western foothills of the northern Santa Ana Mountains. The hills and ridges in the eastern part of Existing PA 51 are composed of older, underlying marine and nonmarine rock units of early Oligocene to late Pleistocene (23 million to 2 million years ago). In order of decreasing geologic age, these latter rock units include the undifferentiated Sespe and Vaqueros Formations, Topanga and Monterey Formations, Oso Member of the Capistrano Formation, Niguel Formation, and Nonmarine Terrace Deposits. Nonmarine Terrace Deposits also underlie the terraces at the south corner of Existing PA 51. The northwestern corner of Existing PA 51 contains a small portion of the Santa Ana Mountains foothills, which were separated from the main formation by erosion. This small portion is composed of undifferentiated late Cretaceous (135 million years ago) Marine Williams Formation. The rock units underlying portions of Existing PA 51 have previously yielded important fossil remains at recorded fossil sites on and near the site. There are three recorded fossil sites in Existing PA 51. These sites occur in undifferentiated Sespe and Vaqueros Formations and in the Topanga Formation. Fossil types include marine invertebrates and vertebrates, continental vertebrates, land plants, and land mammals. The three recorded fossil sites lie within the proposed habitat preserve portion of Existing PA 51 (2003 OCGP FEIR p. 5.10-1 and Table 5.10-1).

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Chapter 8, *Impacts Found Not To Be Significant* of this DSSEIR discusses why it was concluded that Cultural and Paleontological Resources impacts of the 2012 Modified Project did not need to be analyzed in detail in this DSSEIR.

Geology and Soils

The 2011 Certified EIR describes the topography of the Proposed Project Site as nearly flat and gently sloping down to the west to southwest, with elevations ranging from 450 feet above mean sea level (msl) to 200 feet above msl. Existing PA 30 is located at the southeast margin of the Tustin plain, with elevations ranging from about 260 to 300 feet above msl. Existing PA 51 includes some slopes of the Santa Ana foothills, which reach elevations of about 750 feet above msl. Alluvial soils of six major soil associations consisting predominantly of varying sands, silts, and clayey silty sands are present within Existing PA 51. Soils underlying Existing PA 30 contain clayey loam alluvial material, terrace deposits, and old and unconsolidated recent alluvium of the Myford and Sorrento series.

The 2011 Certified EIR identified the primary potential seismic hazard in the area of the 2011 Approved Project as ground motion. Seismic Response Area (“SRA”) designations are used by the City to assess the geologic and seismic risk associated with potential development. All of Existing PA 30 and a majority of Existing PA 51 are within SRA-2 (denser soils/deeper groundwater) and are considered suitable for development. The planned development area of Existing PA 51 situated north of Irvine Boulevard is designated SRA-3 (alluvium/shallow bedrock) and also susceptible to ground motion.

No known active faults crossing or projecting into the Proposed Project Site were identified in the 2011 Certified EIR; however, the Proposed Project Site is located within the seismically active Southern California region and there are two active faults—Whittier-Elsinore Fault and Newport-Inglewood Fault—located within 14 miles of the site.

Chapter 8, *Impacts Found Not To Be Significant*, of this DSSEIR discusses why it was concluded that Geology and Soils impacts of the 2012 Modified Project did not need to be analyzed in detail in this DSSEIR.

Hazards and Hazardous Materials

The operation of many facilities located in Existing PA 51 historically involved the use, storage, transfer, and disposal of hazardous materials. Section 5.5, *Hazards and Hazardous Materials*, of this DSSEIR summarizes information from the Base Realignment and Closure Business Plan for MCAS El Toro, dated May 2002, and other sources that informed the 2011 Certified EIR, as well as other relevant sources including the Final Finding of Suitability for Transfer (“FOST”) 1 through FOST 6 documents. As described in Section 5.5, *Hazards and Hazardous Materials*, of this DSSEIR, those six FOSTs document that all necessary remediation to protect human health and the environment has been completed on 3329.7 acres of the former MCAS El Toro. By contrast, at the time the 2003 OCGP EIR was certified, none of the property comprising the Proposed Project Site had been determined to have all necessary remediation complete. Information concerning remediation is subject to periodic change as additional information is generated from cleanup programs and activities that are being planned for, or are in progress. This information may be found at the MCAS El Toro Information Repository Collection located both at the Heritage Park Regional Library in Irvine, California, and at the former MCAS El Toro library.

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The military mission at the former MCAS El Toro commenced towards the end of World War II and concluded with the closure of the air station in 1999. During the approximate 55 years of military operation, the air station activities, including the operation and maintenance of military aircraft and automotive vehicles, required the use of a large variety of hazardous materials. These hazardous materials consisted of petroleum-based products such as aviation and vehicular fuels, engine and lubricating oils, solvents, cleaners, paints, thinners, pesticides and herbicides; chlorinated/halogenated compounds, including trichloroethylene (“TCE”) and polychlorinated biphenyls (“PCB”), some radioactive materials; ordnance munitions; and propellants. Use of these materials typically generates hazardous byproducts and waste. A risk of explosion is associated with some of these materials. Oil-water separators (“OWSs”) were located throughout the former air station at various facility locations. Wastewater from aircraft wash areas and vehicle wash racks passed through OWSs to the sanitary sewer and storm drainage systems. Materials recovered from the OWSs were handled as hazardous wastes. Fuel storage areas also generated hazardous wastes when fuel storage tanks were cleaned and sludge was pumped out, or when fueling/defueling or loading/unloading operations resulted in spills. Permitted hazardous waste storage areas were located throughout the former air station and held hazardous, flammable, and unused chemical material and wastes. Ordnance munitions were used, handled, stored, and disposed of in Existing PA 51. Pesticides and herbicides historically were used at the former air station to control rodents, vectors, and weeds, as well as on agricultural parcels leased to farming operations. PCB transformers were in use throughout the former air station. (2011 SEIR, Section 5.4)

Although a total of 1,114 buildings have been surveyed, abated, and demolished since the 2003 OCGP EIR was certified, there are 180 buildings (both residential and non-residential) remaining at the former MCAS El Toro. Many of these remaining buildings and facilities may contain hazardous building materials such as asbestos-containing building materials (“ACM”) and lead-based paint (“LBP”). ACM is associated with respiratory ailments, including cancers, which are caused by inhaling asbestos fibers, as well as with gastro-intestinal disease associated with ingestion of ACM. Friable (brittle or readily crumbled) ACM is more readily released into the air than non-friable ACM. Lead is known to have adverse effects on the human body, particularly in children. Exposure usually occurs through ingestion and inhalation. Both ACM and LBP were in common use prior to 1980 when many of the structures in Existing PA 51 were built. Prior to demolition of any of the remaining buildings, all asbestos-containing materials (>1% asbestos), all assumed ACM (AACM), and all asbestos-containing construction materials (“ACCM”; >0.1% to 1% asbestos) will be abated. (2011 SEIR, Section 5.4)

Many of the existing public streets in the vicinity of the Proposed Project Site were probably used by vehicles transporting hazardous materials and wastes to and from Existing PA 51 and the region, which would have resulted in the potential for hazardous spills. Rail cars on the railroad tracks that traverse the Proposed Project Site may also have transported hazardous materials. Hazardous materials (jet fuel and natural gas) were also transported onto the former MCAS El Toro site by pipeline. There is an existing fuel pipeline in the railroad right-of-way along the southern boundary of the Proposed Project Site. (2011 SEIR, Section 5.4)

A description of the 2012 Modified Project’s impacts related to hazards and hazardous materials as compared to the 2011 Approved Project is included in Section 5.5, *Hazards and Hazardous Materials*, of this DSSEIR.

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Hydrology and Water Quality

The 2011 Certified EIR described the Approved Project Site, within which is the Proposed Project Site, as being located within the San Diego Creek watershed, which includes the San Diego Creek, Peters Canyon Channel, and the tributaries to these water courses. The major drainage channels that traverse Existing PA 51 are the Marshburn Channel, Bee Canyon Channel, Agua Chinon Channel, and Borrego Canyon Channel. Serrano Creek and Upper San Diego Creek Channel traverse Existing PA 30 in the southern tip of the Proposed Project Site located south of the existing SCRRA rail tracks.

San Diego Creek and Upper Newport Bay are listed as impaired water bodies under Section 303(d) of the federal Clean Water Act. Accordingly, Total Maximum Daily Loads (“TMDLs”) are being established for the pollutants that have impaired these water bodies, and a list was included in the 2011 Certified EIR (see 2011 SEIR Table 5.7-2).

The 2011 Certified EIR also noted that the County of Orange and the City hold a National Pollution Discharge Elimination System (“NPDES”) permit for the storm drain systems, and that the State has issued a NPDES general permit relating to construction activities on sites of one or more acres in the area. Lastly, the flood control improvements associated with the SR-133 toll road were noted in the 2011 Certified EIR as having reduced the 100-year flood zone north and west of the Approved Project Site.

A further description of the 2011 Approved Project's approved hydrology and water quality plans and an analysis of the 2012 Modified Project's impacts on water quality and hydrology as compared to the 2011 Approved Project are included in Section 5.6, *Hydrology and Water Quality*, of this DSSEIR.

Mineral Resources

According to the 2011 Certified EIR, there are no known mineral resources on the Proposed Project Site. Most of the Proposed Project Site is mapped as Mineral Resource Zone 1 (MRZ-1) by the California Geological Survey, designating areas where available geologic information indicates there is little likelihood that significant mineral resources are present. The central and eastern parts of District 7 are mapped as MRZ-3, designating areas containing known or inferred mineral resources of unknown significance (CDGM 1994). No impacts to mineral resources were identified in the 2011 Certified EIR.

Chapter 8, *Impacts Found Not To Be Significant*, of this DSSEIR discusses why it was concluded that Mineral Resources impacts of the 2012 Modified Project did not need to be analyzed in detail in this DSSEIR.

Noise

As described in Section 5.8, *Noise*, of this DSSEIR, community noise levels are measured in terms of the A-weighted decibel (dBA). A-weighting is a frequency correction that correlates overall sound pressure levels with the frequency response of the human ear. The noise rating scale normally used in California (including Irvine) for land use compatibility assessment is the Community Noise Equivalent Level (“CNEL”). The CNEL is a time-weighted, 24-hour average noise level based on the A-weighted decibel.

Noise levels in the area of the Proposed Project Site are influenced primarily by motor vehicle traffic, which has the greatest impact on residential areas in Irvine. The 2011 Certified EIR described mobile noise sources from nearby freeways, roadways, rail facilities, and vehicle use at adjacent commercial

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businesses, light industrial facilities, and agricultural lands as the dominant noise sources in the area of the Proposed Project Site. Stationary sources of noise included temporary and intermittent noise from construction activities and agricultural operations, noise associated with the industrial/business parks to the east and the business park and entertainment uses to the south.

A discussion of existing noise conditions in the vicinity of the Proposed Project Site and an analysis of the 2012 Modified Project's impacts on noise in the local environment as compared to the 2011 Approved Project are included in Section 5.8, *Noise* of this DSSEIR.

Population and Housing

There are no residents currently living on the Proposed Project Site. At the time of preparation of the 2003 OCGP EIR, there were 4,380 vacant group quarters and 1,209 vacant single-family residential units on the Proposed Project Site from the site's previous use as a Marine Corps base. However, as described in the 2011 SEIR, the majority of the units have been demolished and the remaining units are not fit for human habitation.

A description of the 2012 Modified Project's impacts related to population and housing as compared to the 2011 Approved Project is included in Section 5.9, *Population and Housing*, of this DSSEIR.

Public Services and Utilities

The Proposed Project Site is surrounded by existing urban development with existing public services and utilities. All public services are currently available to the Proposed Project Site. Law enforcement is provided by the Irvine Police Department. Fire and paramedic services are provided by the Orange County Fire Authority ("OCFA"). Schools are operated by the Irvine Unified School District ("IUSD") and Saddleback Valley Unified School District ("SVUSD"). Water and sewer service is provided by the Irvine Ranch Water District ("IRWD"). The 2012 Modified Project's impacts on the provision of public services and utilities as compared to the 2011 Approved Project are analyzed in Section 5.10, *Public Services*, and Section 5.13, *Utilities and Service Systems*, respectively, of this DSSEIR.

Transportation and Traffic

Major roadways bordering the Proposed Project Site are Sand Canyon Avenue to the northwest, Portola Parkway and Irvine Boulevard to the north, and Bake Parkway to the northeast. The Irvine Station is located adjacent to the SCRRA rail tracks, which traverse the Proposed Project Site and separate Existing PAs 30 and 51. The regional circulation system performance criteria applied in this area of Irvine are based on the criteria approved in the 2003 North Irvine Transportation Model ("NITM") Program Nexus Study. The criteria include components for arterial roadways, intersections, freeway/tollway ramps, and freeway/tollway mainline segments.

A description of the existing traffic conditions and the 2012 Modified Project's impacts on the traffic and circulation system as compared to the 2011 Approved Project is set forth in Section 5.12, *Transportation and Traffic*, of this DSSEIR.

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Land Use and Planning

City of Irvine General Plan

Future development of all land within Irvine is guided by the City of Irvine General Plan, which underwent a comprehensive amendment on March 9, 1999. The City also amended its Housing Element in 2012. The most recent General Plan supplement, Supplement No. 7, reflecting subsequent amendments was issued in March 2009. Supplement No. 8 is expected to be adopted by the Irvine City Council in July 2012. The General Plan consists of a series of State-mandated and optional “elements” that direct the City’s physical, social, and economic growth: Land Use, Circulation, Housing, Noise, Public Facilities, Waste Management, Energy, Safety, Parks and Recreation, Conservation and Open Space, Seismic, Cultural Resources, and Growth Management. A full discussion of the 2012 Modified Project’s relationship to and consistency with the applicable policies and programs of the City’s General Plan is contained in Section 5.7, *Land Use and Planning*, of this DSSEIR.

Land Use Element: Per the City’s General Plan Land Use Element and as shown on General Plan Figure A-3, the entire Proposed Project Site consists of one land use designation, Orange County Great Park. General Plan Figure A-3 is shown in Figure 4-1, *General Plan Land Use Designation*, of this DSSEIR. The Orange County Great Park land use category ensures the development of the Great Park and other cultural and institutional uses at the former MCAS El Toro site along with a mixed-use community. This land use category includes habitat preservation, conservation and open space, parks and recreation, education, institutional, and other public-oriented land uses, as well as opportunities for the private development of agriculture, research and development, commercial, transit-oriented, and residential development.

Circulation Element: This element describes the nature and extent of the existing circulation network, and identifies trends, issues, and public policies relating to the development of a balanced, multimodal circulation system for Irvine. Four different types of systems compose Irvine’s circulation system: air, road, public transit, and trails. The Circulation Element is designed to:

- Create a hierarchy of roadways.
- Reinforce boundaries of planning areas.
- Respond to conservation, noise, air pollution, and wildlife preservation policies.
- Satisfy City General Plan and Strategic Business Plan objectives.

Housing Element: The Housing Element sets forth the City’s five-year strategy to preserve and enhance the community’s character, expand housing opportunities for all economic segments, and provide guidance for local government decision-making in all matters related to housing. The Housing Element consists of the following major components:

- ***Housing Needs Assessment.*** An analysis of the demographic, household, and housing market characteristics and trends
- ***Special Housing Needs.*** A discussion of persons with special circumstances, such as persons with disabilities, senior households, large households, single-parent households, the homeless, and farm workers.

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- **Market and Governmental Constraints.** A review of potential market, governmental, and other constraints to meeting the identified housing needs.
- **Financial and Administrative Housing Resources.** An evaluation of the land, financial, and other resources available to address housing needs.
- **Housing, Goals Policies, and Programs.** A set of objectives and policies to address the housing needs.

Seismic and Safety Elements: These elements identify seismic and safety hazards and discuss strategies for reducing disasters. Due to the close relationship between the Seismic and Safety Elements, they are considered together in identifying the location and type of development permitted in the City, in developing building standards, and in providing services to Irvine residents, such as community safety programs that reduce the potential for loss of life, injuries, and property damage associated with natural and man-induced hazards. These hazards include fire, floods, geologic hazards, and aircraft operations.

Cultural Resources Element: This element recognizes the importance of historical, archaeological, and paleontological resources in Irvine and establishes a process for their early identification, consideration, and where appropriate, preservation.

Noise Element: Noise, as defined in this element, is generally unwanted sound which is considered unpleasant and bothersome. Unwanted noise can affect people both physically and psychologically. People are usually more sensitive to noise during the evening and nighttime because of reduced activities, fewer noise-emitting sources, and the need for rest. Land uses in which people are especially sensitive to noise include residential, convalescent and rest homes, hospitals, libraries, churches, and schools. This element provides guidelines for minimizing noise impacts from various sources.

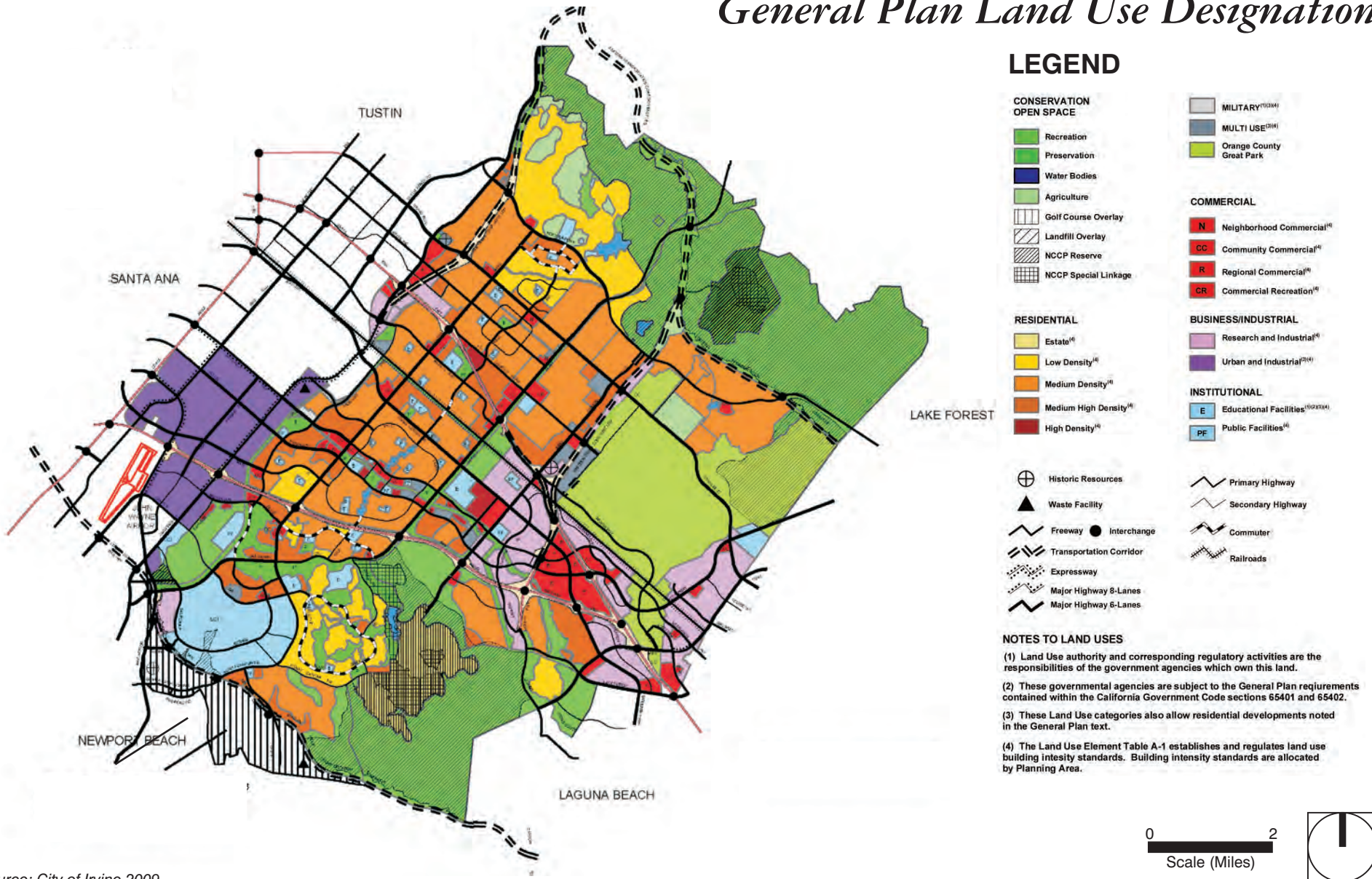
Public Services and Facilities Element: Public facilities are institutional responses to basic needs, such as health, education, safety, recreation, and worship. Examples of typical public facilities include churches, hospitals, and police stations. This element provides policies and criteria for the development of various types of community facilities, their relationships to one another, and their location to serve the needs and desires of the community.

Integrated Waste Management Element: This element serves to “encourage solid waste reduction and provide for the efficient recycling and disposal of refuse and solid waste material without deteriorating the environment.” The collection and disposal components of waste management are further described as follows:

- **Solid, Nonhazardous Waste.** Solid waste collection is usually accomplished by picking up refuse at the sources via collection vehicles, separating out recyclable materials at transfer stations, and then transporting the residual material. Solid wastes can be disposed of in several ways, such as sanitary landfill, recycling, waste-to-energy, and composting.
- **Liquid, Nonhazardous.** Liquid, nonhazardous wastes are usually collected through a sewer system and treated at a wastewater treatment facility, with the liquid waste being disposed of in the ocean or treated for reuse as reclaimed water. The resulting sludge can be disposed of in a sanitary landfill, sludge farm, or eliminated through incineration.

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General Plan Land Use Designation



Source: City of Irvine 2009

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City of Irvine • **Figure 4-1**

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- **Hazardous Waste.** Hazardous wastes are required by State law to be recycled, treated onsite, or treated at a designated waste treatment facility whereby hazardous materials are neutralized prior to final disposal. Liquid hazardous wastes are either treated at the waste source to neutralize hazardous components and then placed in the sewer system, or are not treated and are collected in specifically designed collection vehicles for ultimate disposal.

Energy Element: This element provides a basis for long-range planning. In addition, it summarizes information on energy supply and demand. The associated State and local objectives, when implemented, will result in efficient energy consumption by the City and its residents, businesses, and industries.

Parks and Recreation Element: A park is defined as any public or private land set aside for aesthetic, educational, recreational, or cultural use. The amount of parkland required for dedication is established at the time of subdivision approval through the implementation of the Irvine Subdivision Ordinance (Irvine Municipal Code Section 5-5-101 *et seq.*). Irvine's public park system is divided into two categories: community parks and neighborhood parks. Neighborhood parks are further divided into public or private parks. This element establishes guidelines for the orderly development of Irvine's park and recreation facilities.

Conservation and Open Space Element: This element provides long-term guidance for the preservation of significant natural resources and open space areas. The value of this element is threefold. First, it provides mechanisms for ensuring balance between the urban and natural environments in Irvine. Second, it recognizes natural and man-made hazards that could potentially affect the community if development were to occur. Finally, it provides specific policies and a program for preserving, managing, and using natural and man-made resources.

Growth Management Element: In November 1990, Orange County voters approved a Revised Traffic Improvement and Growth Management Ordinance. This ordinance imposed an increase to the retail sales tax by 0.5 cent for a 20-year period for the funding of transportation-related improvements. To receive a portion of these revenues, the City must satisfy the requirements established by the Countywide Growth Management Program. The City's Growth Management Element comprises a series of objectives and implementing actions to carry out the goals of the County program and ensure that growth and development is based on the City's ability to provide an adequate circulation system and public facilities. The intent of the Growth Management Element is to establish the basic policy framework for future implementing actions and programs in a single General Plan element.

City of Irvine Zoning Classifications

The City of Irvine Zoning Ordinance ("Zoning Ordinance") establishes zone-specific development regulations, including height limits, setback requirements, parking ratios, and other development standards. It is through the implementation of the Zoning Ordinance that long-term goals and objectives of the City's General Plan are implemented. The City establishes zoning regulations according to zoning designations as well as special development requirements for each Planning Area. The Proposed Project Site is located in Existing PAs 30 and 51.

As shown in previous Figure 3-5, *Existing Zoning*, Existing PA 51 consists of six zoning designations, which include: 1.1 Exclusive Agriculture, 1.4 Preservation, 1.9 Orange County Great Park, 3.2 Transit Oriented Development, 6.1 Institutional, and 8.1 Trails and Transit Oriented Development. Existing PA 30

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consists of five zoning designations: 1.1 Exclusive Agriculture, 1.4 Preservation, 3.2 Transit Oriented Development, 4.3 Vehicle-Related Commercial, and 5.4B General Industrial.

- **1.1 Exclusive Agriculture.** This land use category applies to land designated as agriculture in the City's General Plan. Only agriculture and accessory uses are permitted in this category.
- **1.4 Preservation.** This land use category provides for the protection and maintenance of natural resources. These lands have been judged viable for permanent preservation in a natural state with little or no modification. Visually significant ridgelines, biotic communities of high significance, geological constraints and cultural resources are typical of lands in this category.
- **1.9 Orange County Great Park.** This land use category identifies lands suitable for active and passive recreational opportunities and activities for public use and enjoyment. The Orange County Great Park is a multi-destination facility that will include a variety of educational and recreational activities, including sports fields, museums, gardens, trails, wildlife habitat and many other public-oriented land uses.
- **3.2 Transit Oriented Development.** This land use category is consistent with the transit oriented development area within the Orange County Great Park land use category as defined in the General Plan. Transit oriented development encourages a diverse mix of higher-intensity commercial, office, residential and institutional uses in areas with high potential for enhanced transit and pedestrian activity. The category is intended to reduce reliance on the automobile by encouraging a compact mix of uses within the same site, including the integration of complementary uses within the same building. Transit oriented development must be designed to create a safe and pleasant pedestrian environment by providing amenities that support the use of transit, bicycles, and pedestrian facilities, and by providing for a safe, pleasant, and convenient walking experience.
- **4.3 Vehicle-Related Commercial.** This land use category applies to commercial areas which are designed primarily to provide for the sale and servicing of, and parts for, automobiles and recreational vehicles.
- **5.4B General Industrial.** This land use category reserves an area for uses such as manufacturing, warehousing and service industries.
- **8.1 Trails and Transit Oriented Development.** The Trails and Transit Oriented Development category allows for a mix of residential, commercial, recreational and education uses that support a multi-use environment, and which is complementary to the 3.2 Transit Oriented Development district located in Existing PAs 30 and 51 and to the Orange County Great Park land use category as defined in the General Plan.

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4.5 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed when a project's incremental effect is cumulatively considerable. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the 2012 Modified Project alone. Section 15355 of the CEQA Guidelines defines cumulative impacts to be "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of the 2012 Modified Project when added to effects of past projects, other current projects and probable future projects in the vicinity.

CEQA Guidelines Section 15130 (b)(1) states that the information utilized in an analysis of cumulative impacts should come from one of two sources, either:

- A. A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency; or
- B. A summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative impacts analyses contained in this DSSEIR use a combination of both methods A and B, with the General Plan projections approach utilized most often, based on adopted growth forecasts. The General Plan projections include buildout of the adjacent cities' general plans or adopted growth projections, in addition to the City's General Plan. However, the General Plan projections approach has been supplemented in this DSSEIR where recent general plan amendments have been approved since adoption of the most recent growth forecasts, as further discussed below. The cumulative impacts analyses contained in this DSSEIR are based on the "Full Buildout of the General Plan" scenario (which includes General Plan buildout projections and approved projects not yet built). Therefore, the "Full Buildout of the General Plan Plus the 2012 Modified Project" scenario assumes maximum development of Irvine and the 2012 Modified Project, if the 2012 Modified Project were approved and pursued to completion.

The Land Use Element ("LUE") of the City's General Plan designates the general distribution and location of land to be used for residential, business, industry, open space and other types of land use. The LUE designates the general distribution and location of land to be used for residential, business, industry, open space and other types of land use. The land use categories established in the LUE guide future development and growth in a way that promotes the health, safety, and welfare of the community. To regulate the amount of building intensity, the LUE also includes several statistical tables that define the amount of physical development that are allowed in each land use category. To further regulate the spatial distribution of planned growth, land use intensities are allocated throughout the City's various Planning Areas, as shown in Figure 4-2, *City of Irvine Planning Areas*, of this DSSEIR. This geographic planning framework is used in both the General Plan and the Zoning Code. Planning Areas are also used for organizing the City's development monitoring database.

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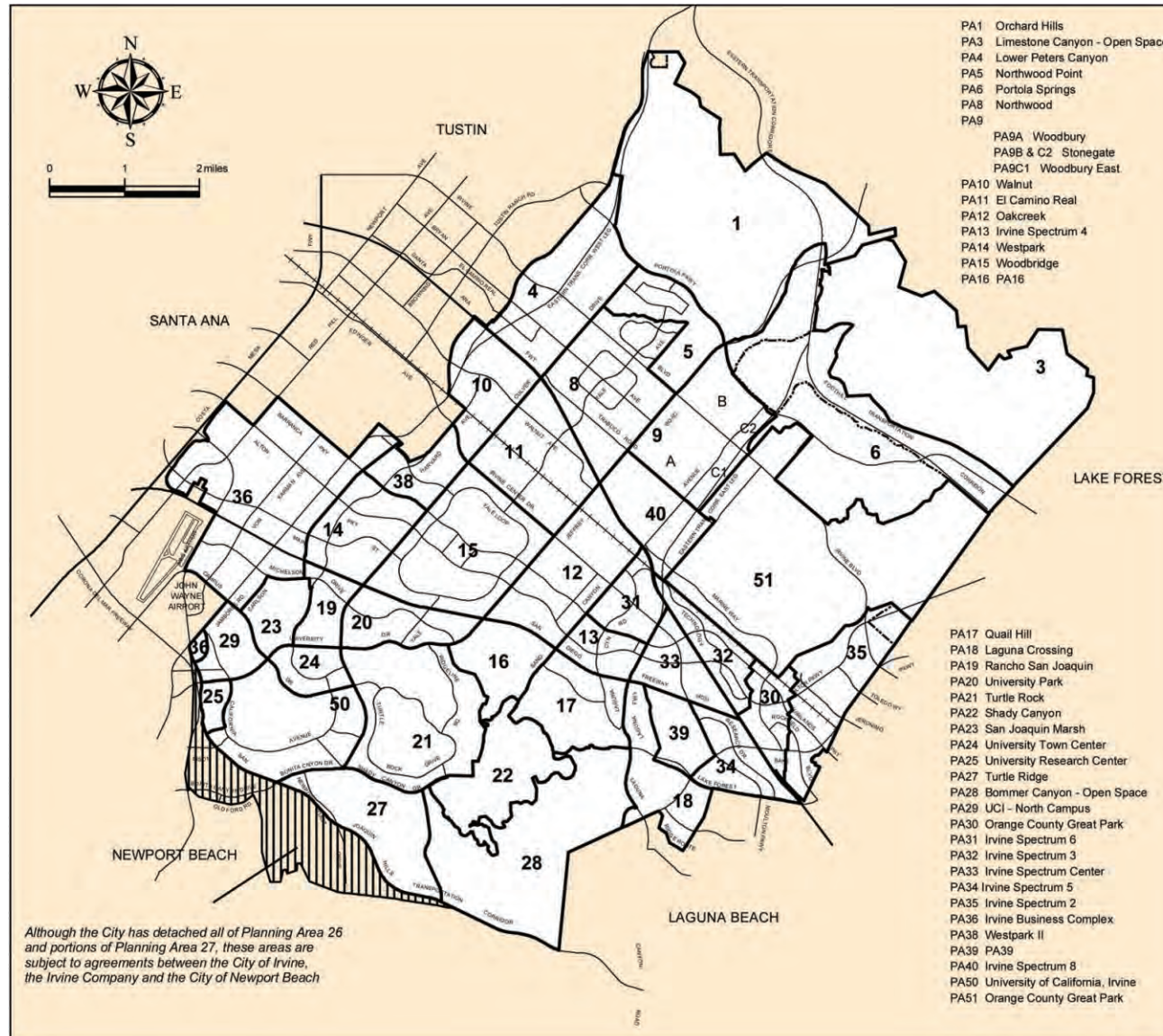
As shown in Table 4-1, *General Plan Land Use Summary by Planning Area*, of this DSSEIR, the adopted City of Irvine General Plan includes a total of 4,691,773 square feet designated Multi-Use, 95,775,944 square feet designated Industrial, 20,412,444 square feet designated Commercial, 19,043,066 square feet designated Institutional, and a total of 130,783 residential units, including 3,705 Density Bonus units allowed pursuant to State law. The City has adopted growth projections for planning horizon year post-2030 (representing full General Plan buildout), based upon the City's General Plan, and demographic forecasts adopted by the OCCOG in November 2006. The County of Orange, and its cities and public agencies, have executed a Memorandum of Understanding with the OCCOG to contract with the Center for Demographic Research at California State University, Fullerton, to develop and periodically update demographic growth projections for Orange County based on adopted General Plans and historic growth trends. Orange County Projections (“OCP”)-2004 is the most current adopted growth projection that has been disaggregated into Traffic Analysis Zones (“TAZs”) for use in traffic studies in the City. 2006 and OCP-2010 data have been released since the adoption of OCP-2004; however, these projections have not been disaggregated into TAZs in the City's traffic model (ITAM).

The City has developed a socioeconomic-based traffic model, known as the Irvine Transportation Analysis Model (“ITAM”), for purposes of forecasting future traffic volumes associated with cumulative growth projections within Irvine and regionally. Regional growth outside of Irvine has accounted for traffic, air quality, greenhouse gas, and noise impacts through use of ITAM. The growth projections adopted by the City and surrounding area for ITAM are used for the cumulative impact analyses in this DSSEIR. The TAZs used in ITAM for the traffic analysis of the 2012 Modified Project utilize OCP-2004 and the City's General Plan projections, and reflect the following modifications to the OCP-2004 projections that account for more recent data relevant to growth projections in and near Irvine:

- 1) The General Plan Amendment and Zone Change (“GPA/ZC”) for PAs 1 and 9, including the Orange County Master Plan of Arterial Highways (“MPAH”) Amendment to delete the extension of Culver Drive.
- 2) The GPA/ZC for PA 40/12.
- 3) The GPA/ZC for PA 13 (Spectrum 4) and PA 31 (Spectrum 6).
- 4) The GPA/ZC for PA 18/33(Lot 109)/34/39.
- 5) The 2011 GPA/ZC for Existing PA 30/51 (Heritage Fields).
- 6) Spectrum Center Housing and Pacifica Office Towers projects in Irvine Center.
- 7) The tract maps for PA 6A, PA 6B, PA 9A including Woodbury Village Retail Center changes, PA 9B, and PA 18.
- 8) The Master Subdivision Map and tentative maps for Existing PA 30/51.
- 9) The Orange County Great Park Master Plan.
- 10) City of Lake Forest Opportunities Study Program.

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City of Irvine Planning Areas



Source: City of Irvine 2009

Heritage Fields Project 2012 GPA/ZC SSEIR

City of Irvine • **Figure 4-2**

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*Table 4-1
General Plan Land Use by Planning Area*

<i>Planning Area¹</i>	<i>Multi-Use (sq. ft.)</i>	<i>Industrial (sq. ft.)</i>	<i>Commercial (sq. ft.)</i>	<i>Institutional (sq. ft.)</i>	<i>Dwelling Units</i>
1	0	0	132,500	0	4,088
3	0	0	0	0	0
4	0	1,423,000	990,000	494,430	8,131
5	0	0	0	0	3,830
6	625,000	0	175,000	0	5,460
8	171,591	0	1,114,600	188,174	8,301
9	450,000	0	0	0	8,832
10	119,850	2,822,921	887,269	39,950	2,883
11	71,174	0	567,712	467,203	5,420
12	470,000	3,603,281	1,105,000	344,440	4,260
13 ³	0	3,558,010	0	1,585,263	0
14	0	0	798,707	318,635	5,285
15 ³	440,158	0	936,789	680,349	9,627
16	0	0	0	0	0
17	0	1,060,000	150,000	0	2,666
18	0	0	0	0	757
19	0	0	294,390	9,374	1,784
20	0	0	173,542	153,143	2,809
21	0	0	0	568,921	4,250
22	0	0	0	0	400
23	0	0	0	112,230	1,040
24	654,000	0	68,953	25,850	2,757
25 ³	0	1,436,170	0	0	0
27	0	0	0	210,740	2,155
28	0	0	0	0	0
29	0	0	0	761,000	435
30	0	1,600,000	102,000	53,500	0
31	0	6,888,383	147,359	350,370	0
32	0	4,355,127	1,398,947	0	0
33	0	0	7,955,092	0	3,150
34	0	4,763,300	963,930	0	0
35	0	12,815,738	1,252,654	62,101	0
36	0	48,787,662	0	0	17,038
38	0	0	0	0	3,413
39	0	0	0	0	3,700
40	1,540,000	1,662,352	205,000	100,000	3,918
50	0	0	0	9,810,293	9,500
51	150,000	1,000,000	933,000	2,707,100	4,894
Unallocated	0	0	60,000	0	0
Total	4,691,773	95,775,944	20,412,444	19,043,066	130,783²

Notes:

1. Only Planning Areas that are planned for development are shown. As a result, some Planning Areas are not listed above since they are designated for permanent open space. In addition, Planning Area 26 was detached from the City and annexed to the City of Newport Beach.
2. Includes an additional 3,705 Density Bonus units which are allowed City-wide pursuant to State law, and are located within Planning Areas 4, 15, 17, 36 and 51.
3. An additional 1,461,824 square feet of non-residential uses are allowed within Planning Areas 13, 15, and 25.

4. Environmental Setting

- 11) The East Orange GPA and associated MPAH Amendments.
- 12) City of Newport Beach General Plan 2006 Update.
- 13) Tustin Legacy Specific Plan.
- 14) 2007 Long Range Development Plan for the University of California, Irvine.
- 15) PA 33 Lots 105, 107, and 108 GPA/ZC.

This approach of using adopted local growth projections along with recent updates that incorporate the major projects such as those listed above is appropriate for evaluating cumulative impacts related to the 2012 Modified Project because it accounts for more recent data. This is especially true given the size and long-term nature of the 2012 Modified Project, which is better considered within the context of adopted growth projections rather than by attempting to list all reasonably foreseeable individual development projects that may occur nearby over the next several years.

3. *Project Description*

3.1 *PROJECT LOCATION*

As used in this DSSEIR, the term "Proposed Project Site" refers to and encompasses; 1) the Heritage Fields Development, also known as the Great Park Neighborhoods, consisting of nine existing Development Districts; 2) an approximately 11 acre parcel currently owned by the Transportation Corridor Agencies (TCA) located adjacent to the SR-133 Freeway between Trabuco Road and Irvine Boulevard (the "TCA Parcel"); 3) Lot D, Lot E, and Lot F as depicted on 2nd Amended Vesting Tentative Tract Map 17008 currently zoned 3.2 Transit Oriented Development within Districts 2 and 3 (together, the "City Parcels"); 4) approximately 132 acres owned by the City and zoned 1.4 Preservation that generally extends from Irvine Boulevard to the Southern California Regional Rail Authority ("SCRRA") rail lines, as depicted in Figure 3-5 and that is part of the Approved Wildlife Corridor Feature; and 5) a portion of the Great Park known as the "Sports Park District," all of which are located within the areas designated as Existing "Planning Area" (PA) 30 and Existing PA 51 in the City's General Plan, northeast of the freeway junction of Interstate 5 (I-5) and Interstate 405 (I-405), within the City. Figure 3-1, *Regional Location*, depicts the location of the Proposed Project Site in a regional context and Figure 3-2, *Local Vicinity*, shows its local context. Figure 3-2 also shows the Development Districts, the TCA Parcel and the additional acreage owned by the City, which are the subject of this DSSEIR.

Existing PA 51 is generally bounded by the Eastern Transportation Corridor to the west, the Foothill Transportation Corridor to the north, the SCRRA rail lines to the south, and Irvine Boulevard and the storm water channel near Alton Parkway to the north. Existing PA 51 abuts Existing PA 30 and PA 32 to the south, PA 35 (Irvine Spectrum 2) and the City of Lake Forest to the east, and PAs 9 and 40 to the west. Existing PA 30 is generally bounded by I-5 to the south, the SCRRA rail lines to the north, and the Irvine Spectrum to the east and west (Irvine Spectrum 2- PA 35 and Irvine Spectrum 3 - PA 32).

The major roadways bordering the 2012 Modified Project are Sand Canyon Avenue to the west, Portola Parkway to the north, and Alton Parkway to the east. Irvine Boulevard separates District 7 and District 8 on its north side from District 1-North, District 1-South and District 4 on its south side. The Irvine Station is adjacent to the SCRRA rail lines that traverse the Proposed Project Site and that separate Existing PAs 30 and 51. Surrounding the Proposed Project Site are residential and nonresidential uses to the north and west, open space to the northeast, and nonresidential and mixed land uses to the east and southeast within the City of Lake Forest and Irvine. An aerial photograph of the Proposed Project Site is shown in Figure 3-3, *Aerial Photograph*.

3.2 *STATEMENT OF OBJECTIVES*

The following objectives have been established for the 2012 Modified Project and will aid decision makers in their review of the 2012 Modified Project, its associated environmental impacts, and Alternatives:

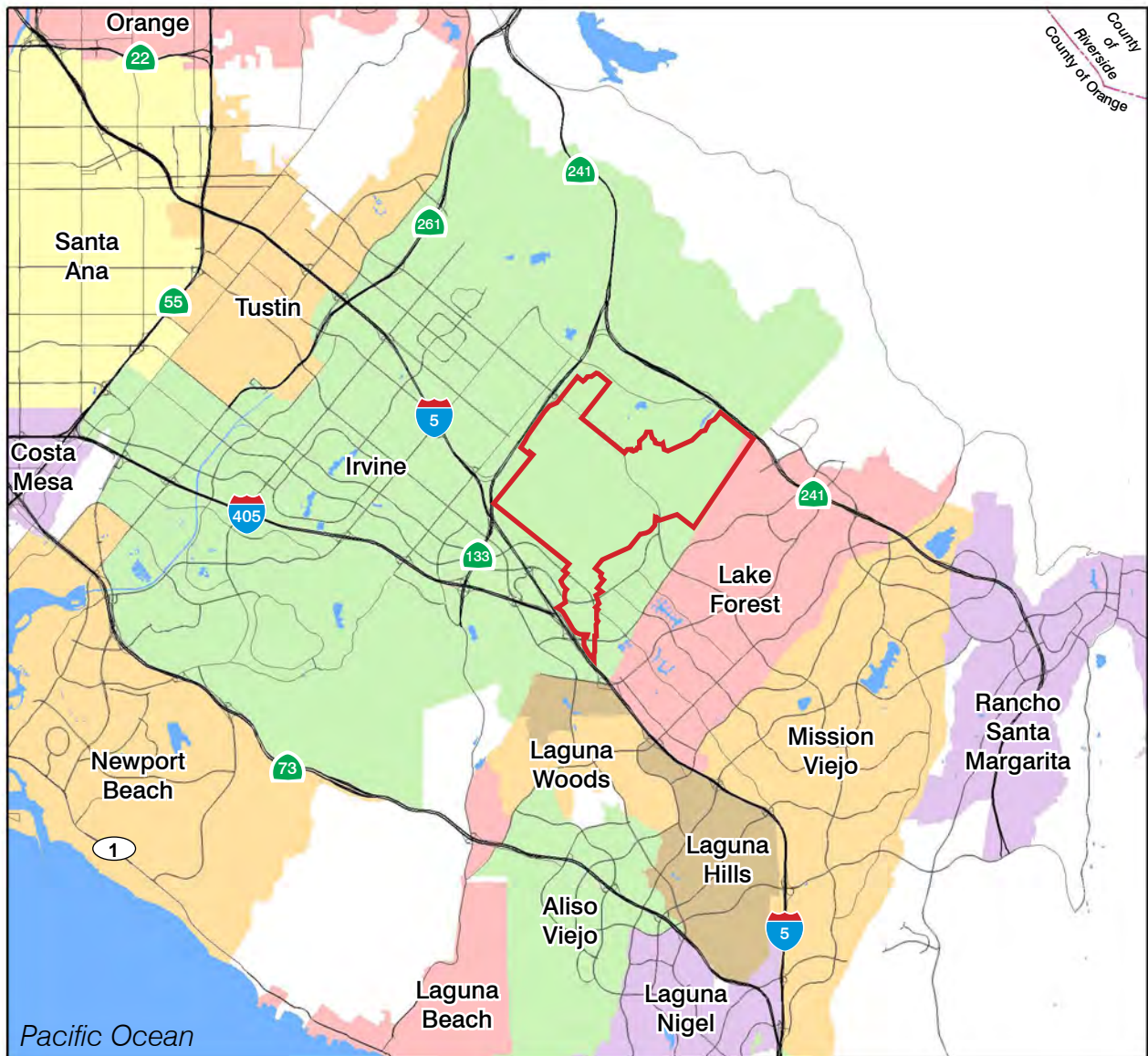
3. Project Description

3.2.1 Land Use

- Implement the project objectives stated in the 2011 Certified EIR.
- Redevelop and reuse a portion of the former MCAS El Toro Property for a mixed-use community adjacent to the Great Park, consistent with the General Plan.
- Increase the amount of property within “Combined PA 51” (formerly Existing PA 30 and Existing PA 51) that is zoned 8.1 Trails and Transit Oriented Development (TTOD) to provide greater flexibility in meeting City General Plan Goals.
- Advance the State’s and Southern California Association of Governments’ (“SCAG”) policies to provide sustainable mixed-use development and to reduce trips and vehicle miles travelled in automobiles and light trucks.
- Help meet the City’s Regional Housing Needs Assessment.
- Provide for a range of housing types in a location that is responsive to current and anticipated demands and is supportive of continued economic growth within the City.
- Convert existing non-residential intensity to residential uses through a revised land use plan in Combined PA 51, thereby providing a better balance of population and employment to increase internal trip capture and reduce vehicle miles travelled and improve the jobs/housing balance in jobs-rich Irvine.
- Establish a revised land use plan in Combined PA 51 to create a mixed-use community with neighborhood serving land uses near residences as well as employment centers.
- Combine Existing PAs 30 and 51 into a single PA, Combined PA 51, so that the 2012 Modified Project will be a cohesive development governed by a unified set of land use and development regulations.
- Better accommodate projected regional growth in an infill location that is adjacent to existing and planned infrastructure, urban services, transit, transportation corridors, and major employment centers.
- Establish a revised land use plan that permits a wide range of housing densities, types, styles, prices, and tenancy (for sale and rental).
- Create a mixed-use community that optimizes the open space and recreational opportunities in the adjacent Great Park.
- Provide a biologically effective wildlife corridor that meets the goals of the City’s General Plan, while relocating Segments 2 and 3 of the Approved Wildlife Corridor Feature in order to provide greater flexibility in developing a mixed-use community that meets City General Plan goals.

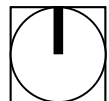
3. Project Description

Regional Location



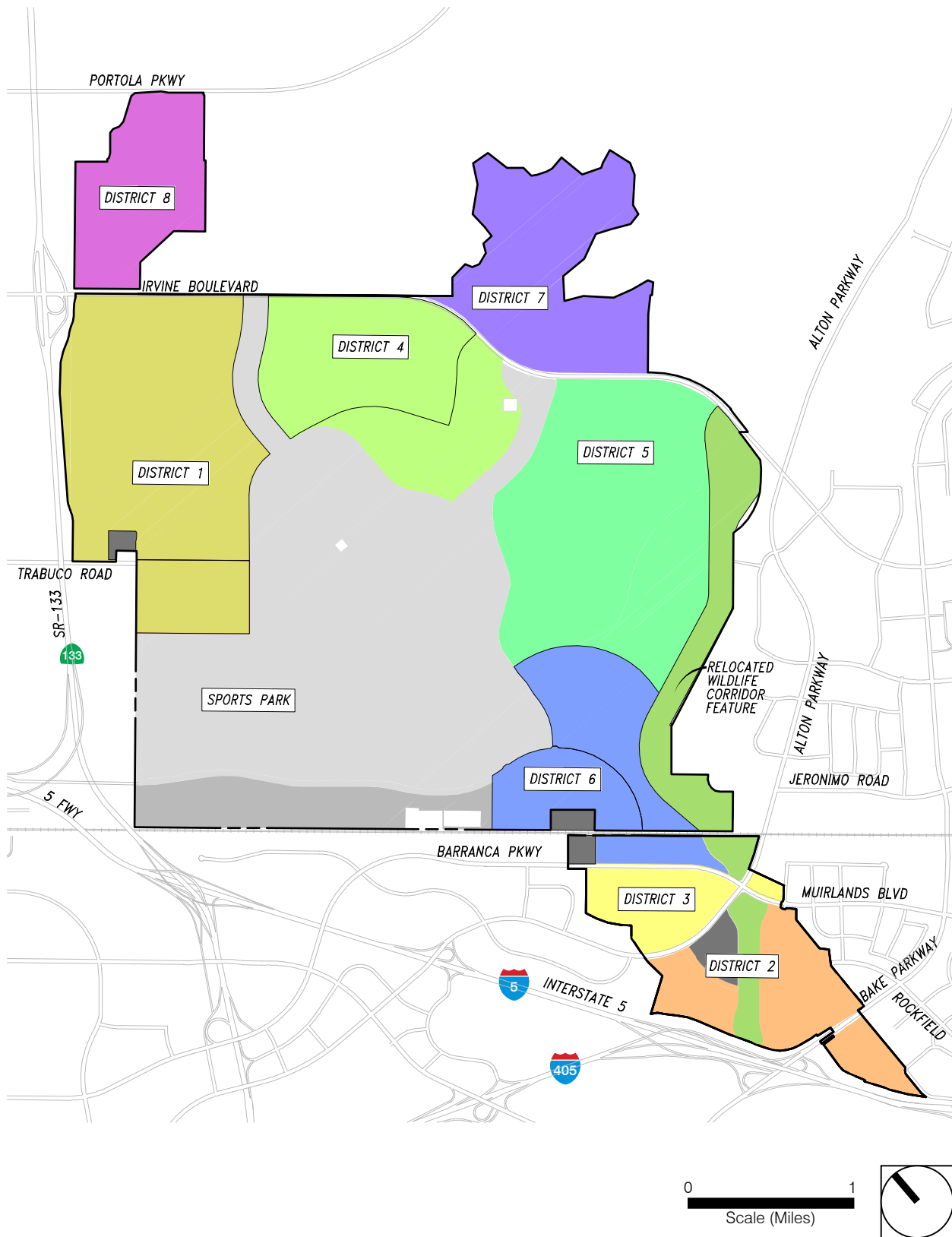
— Combined Planning Area 51 Boundary

0 3
Scale (Miles)



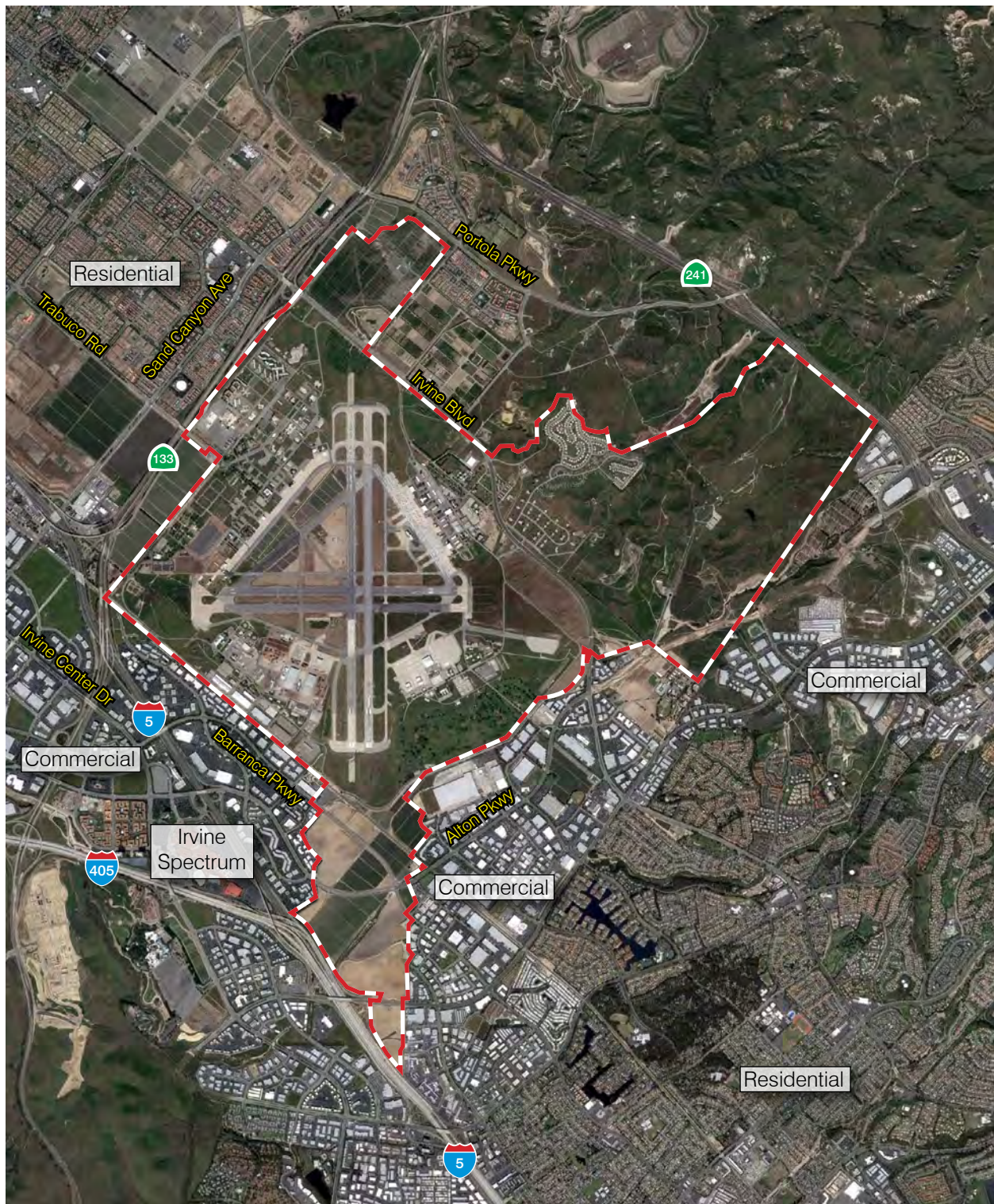
3. Project Description

Local Vicinity



3. Project Description

Aerial Photograph

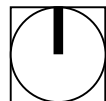


--- Combined Planning Area 51 Boundary

Source: Google Earth Pro 2011

Heritage Fields Project 2012 GPA/ZC SSEIR

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Scale (Miles)



City of Irvine • **Figure 3-3**

3. Project Description

Statement of Objectives, continued

- Provide for a fiscally sound land use plan that includes public and commercial uses to support and enhance the new residential community and other residential communities in the vicinity.
- Provide additional market rate and affordable housing opportunities near existing employment and transportation centers, consistent with the City's General Plan Land Use and Housing Elements, SB 375 and SCAG's Regional Comprehensive Plan.

3.2.2 Transportation

- Provide a safe, efficient, and aesthetically attractive street system with convenient connections to adjoining transportation routes.
- Allow level of service (LOS) "E" to be considered a potentially acceptable level of service within certain high activity, mixed-use areas within the Proposed Project Site, to be consistent with other areas of the City and to promote use of alternative modes of transportation.
- Provide a walkable community through the use of innovative traffic calming techniques such as roundabouts designed to slow traffic, and pedestrian pathways.
- Create a highly livable, pedestrian-friendly environment that encourages alternative means of transportation to the automobile by incorporating unique site designs and enhanced pedestrian access between land uses, trails, and streets.

3.2.3 Open Space

- Create a medium-density, mixed-use community that optimizes the open space and recreational opportunities in the adjacent Orange County Great Park.
- Provide new parks, trails and public open space, and complete connections to regional trails in City's General Plan Trails Map.
- Advance funding for the implementation of recreational facilities for the Great Park.

3.3 PROJECT CHARACTERISTICS

"Project" is defined by the CEQA Guidelines Section 15378 as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1) An...enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100-65700."

Between 2003 and 2011, the City approved the 2011 Approved Project, which includes residential and non-residential development on the portions of Existing PAs 51 and 30 that are owned by Heritage Fields El Toro, LLC, and that are referred to as the Great Park Neighborhoods. As approved by the City, the 2011 Approved Project includes 3,625 residential units (15 percent of which are affordable units) and 1,269 density bonus (DB) units that have been located within Districts 1 North, 1 South, 4, 7, and 8, as

3. Project Description

well as 1,154,700 square feet of non-residential uses that have been located in Districts 1 North, 4, and 8 and 5,430,894 square feet of non-residential uses generally located throughout Existing PAs 30 and 51. The 2011 Approved Project was analyzed in the Program Environmental Impact Report for the Orange County Great Park, certified in May 2003 ("2003 OCGP EIR"), eight subsequently adopted Addenda, and the 2011 Supplemental EIR (collectively, the "2011 Certified EIR"), and includes the mitigation measures recommended in the 2011 Certified SEIR and adopted by the City in the Mitigation Monitoring and Reporting Program ("MMRP") for the 2011 Approved Project.

This DSSEIR analyzes the environmental impacts of the 2012 Modified Project as compared to those of the previously studied 2011 Approved Project.

3.3.1 Previous Environmental Documentation

The 2003 Orange County Great Park (OCGP) EIR

The 2003 OCGP EIR was certified by the City in May 2003. The project analyzed in that EIR consisted of the following actions: (1) Annexation, General Plan Amendment, Pre-Zoning (prior to annexation), and Zoning of the unincorporated portion of PA 51; (2) Annexation of the unincorporated portion of PA 35 (James A. Musick Branch Jail and the Irvine Ranch Water District Parcel); (3) General Plan Amendment and Zone Change for PA 30; and (4) a Development Agreement that vested approval of overlay uses and intensities in consideration for the (i) dedication of land for public purposes, (ii) development and funding of certain infrastructure improvements, and (iii) funding of circulation facilities and infrastructure. Together, these actions established the policy and legislative structure for guiding the future development of the former MCAS El Toro property.

Since certification of the 2003 OCGP EIR, a variety of actions in furtherance of the project analyzed therein have occurred. Those actions and their related environmental reviews pursuant to CEQA, including eight subsequent Addenda, are summarized below. Together, the 2003 OCGP EIR, the eight subsequent Addenda, and the 2011 SEIR are referred to as the "2011 Certified EIR."

Orange County Great Park Redevelopment Plan (Addendum No. 1 to the 2003 OCGP EIR)

On May 18, 2006, the City approved Addendum No. 1 to the 2003 OCGP EIR for the previously approved Redevelopment Plan for the Orange County Great Park project area ("OCGPRP"). The OCGPRP was based upon a Preliminary Redevelopment Plan previously formulated and adopted by the City of Irvine Planning Commission and Irvine Redevelopment Agency on January 15, 2004 and January 27, 2004, respectively. The OCGPRP set forth a process and framework within which specific development plans would be presented and priorities for specific development projects would be established, but did not present specific plans for any redevelopment, rehabilitation, and/or revitalization activities for any areas within the OCGPRP.

The OCGPRP covers approximately 3,905.6 acres within Existing PAs 30 and 51. The environmental review for the OCGPRP was documented in Addendum No. 1 to the 2003 OCGP EIR and was approved by the City of Irvine on May 18, 2006. In summary, Addendum No.1 concluded that, as designed, the OCGPRP would not result in any additional significant environmental effects not already addressed by the 2003 OCGP EIR, or any substantial increase in the severity of previously identified significant effects, or any change in circumstances, and that there was no new information of substantial importance.

3. Project Description

2006 General Plan Amendment and Zone Change (Addendum No. 2 to the 2003 OCGP EIR)

On October 10, 2006, the City approved Addendum No. 2 to the 2003 OCGP EIR which addressed a General Plan Amendment (00416079-PGA) and Zone Change (00416080-PZC) for a Revised Overlay Plan. The General Plan Amendment and Zone Change consisted of adjustments to the boundary between the public and private areas within Existing PAs 30 and 51, revisions to text and figures related to Existing PAs 30 and 51, and the creation of a mixed-use zoning category called the Lifelong Learning District (“LLD”) within Existing PA 51. The General Plan Amendment also included technical changes to the General Plan. The LLD zoning allowed for a combination of residential, commercial, and educational uses that promote and support a mixed-use environment.

The General Plan Amendment and Zone Change addressed in Addendum No. 2 did not result in any changes to the approved land use intensities or allowable land uses in Existing PAs 30 and 51. Addendum No. 2 concluded that, as designed, the aforementioned modifications to the project analyzed in the 2003 OCGP EIR would not result in any additional significant environmental effects not already adequately addressed in the 2003 OCGP EIR, or any substantial increase in the severity of previously identified significant effects, or any change in circumstances, and that there was no new information of substantial importance.

VTTM 17008 (Addendum No. 3 to the 2003 OCGP EIR)

Addendum No.3 to the 2003 OCGP EIR was approved by the City on May 17, 2007. Addendum No.3 addressed Vesting Tentative Tract Map (“VTTM”) No. 17008 (Master Subdivision Map). VTTM No. 17008 subdivided 3,585 gross acres of the Approved Project Site into 44 numbered lots and 13 lettered lots consistent with the minor boundary adjustments made in Addendum No. 2. It did not, however, authorize the construction of any trip-generating land uses, or alter any land use or associated acreages of the project analyzed in the 2003 OCGP EIR, as augmented by Addendum No. 1 and Addendum No. 2. In addition to the subdivision of land, VTTM No. 17008: 1) defined the backbone infrastructure; 2) defined boundaries of areas for future subdivision (i.e. “B”-level tentative tract maps) and development; and 3) delineated the limits of rough grading for the infrastructure requirements of development of the project analyzed in the 2003 OCGP EIR. In summary, Addendum No. 3 concluded that, as designed, VTTM No. 17008 and its attendant features would not result in any additional significant environmental effects not already adequately addressed in the 2003 OCGP EIR, or any substantial increase in the severity of previously identified significant effects, or any change in circumstances, and that there was no new information of substantial importance.

OCGP Master Plan (Addendum No. 4 to the 2003 OCGP EIR)

Addendum No. 4 to the 2003 OCGP EIR was approved by the City on August 2, 2007. Addendum No. 4 addressed the OCGP Master Plan, which provided for the future buildout of a 1,145-acre multi-use public park facility located in the Great Park to include passive and active recreational uses, as well as preservation-oriented uses, including the Approved Wildlife Corridor Feature, and institutional uses. Addendum No. 4 concluded that, as designed, the modifications embodied in the OCGP Master Plan would not result in any additional significant environmental effects not already adequately addressed in the 2003 OCGP EIR, or any substantial increase in the severity of previously identified significant effects, or any change in circumstances, and that there was no new information of substantial importance.

3. Project Description

2008 General Plan Amendment and Zone Change (Addendum No. 5 to the 2003 OCGP EIR)

Addendum No. 5 to the 2003 OCGP EIR was approved by the City on July 22, 2008, and addressed a General Plan Amendment (00468566-PGA) and Zone Change (00468567-PZC) that amended the appropriate figures in the City's General Plan to reflect a relocation of the intersection of Bake Parkway/Marine Way and a reconfiguration of Rockfield Boulevard in the southern portion of Existing PA 30.

Addendum No. 5 also analyzed a General Plan Amendment (00470036-PGA) and Zone Change (00470039-PZA) to: (1) reduce the number of golf course holes required within the Approved Project Site from 45 to 18; (2) remove the requirement for 173 acres of Agricultural Preserve in the Lifelong Learning District; and (3) make other changes to text, tables and figures in the City's General Plan and Zoning Code.

In addition, Addendum No.5 analyzed the Amended and Restated Development Agreement ("ARDA"), which: (1) vested Heritage Fields' right to develop under the City's General Plan and Zoning Code; (2) revised the funding mechanism for the OCGP maintenance; (3) shifted responsibility for defined "backbone infrastructure" cost overruns from the City to Heritage Fields; (4) transferred 130.5 acres of land from Heritage Fields to the City; (5) established the location of a 5.5 acre police facility in the Heritage Fields Development Districts, and required the transfer of that land from Heritage Fields to the City; (6) confirmed runway demolition and recycling protocols; and (7) amended and restated the Master Implementation Agreement, which specifies protocol for backbone infrastructure phasing. Addendum No.5 concluded that, as designed, the matters discussed immediately above would not result in any additional significant environmental effects not already adequately addressed in the 2003 OCGP EIR, or any substantial increase in the severity of previously identified significant effects, or any change in circumstances, and that there was no new information of substantial importance.

Amended VTTM 17008 and Related Approvals (Addendum No. 6 to the 2003 OCGP EIR)

Addendum No. 6 to the 2003 OCGP EIR was approved by the City on October 16, 2008. It analyzed an Amended Vesting Tentative Tract Map No. 17008 (00474083-PTT), Vesting Tentative Tract Map No. 17283 (00467853-PTT), Modification to OCGP Streetscape Design Guidelines (00475427-PMP), Master Landscape and Trails Plan ("MLTP") (00467322-PMP), and the Master Plan for Non Residential Development within the Lifelong Learning District (00470483-PMP). The requested entitlements did not permit any new development or alter approved intensities allocated to the Approved Project Site. Addendum No.6 concluded that, as designed, the above-described VTTMs, Modification to the OCGP Streetscape Design Guidelines, the MLTP, and the Master Plan would not result in any additional significant environmental effects not already adequately addressed in the 2003 OCGP EIR, or any substantial increase in the severity of previously identified significant effects, or any change in circumstances, and that there was no new information of substantial importance.

North Irvine Transportation Mitigation ("NITM") Five Year Review (Addendum No. 7 to the 2003 OCGP EIR)

Addendum No. 7 to the 2003 OCGP EIR was approved by the City on June 29, 2010 to update NITM. In 2007, the NITM Five Year Review was initiated for the purpose of updating cost allocations, proposing alternative mitigation measures, and/or eliminating specific traffic and/or transportation improvements

3. Project Description

that were no longer necessary. The NITM Five Year Review Traffic Study determined that traffic mitigation measures were no longer needed for seven intersections (Alton Parkway/Barranca Parkway, Lake Forest Drive/Irvine Center Drive, Ridge Route Drive/Moulton Parkway, Santa Maria Drive/Moulton Parkway, Los Alisos Boulevard/Trabuco Road, Moulton Parkway/Glenwood Drive-Indian Creek Lane, and Moulton Parkway/Laguna Hills Drive) and one ramp (SR-241 at Lake Forest Drive). Those intersections and that ramp were found to operate within an acceptable level of service (“LOS”) under baseline interim and long-term conditions. The associated future improvements were therefore deleted from the List of NITM Improvements. Since improvements at those locations had been incorporated in the 2003 OCGP EIR as mitigation, an addendum to the 2003 OCGP EIR was required to evaluate the removal of the improvements from the list of mitigation measures. Addendum No.7 concluded that, as designed, the removal of those mitigation measures would not result in any additional significant environmental effects not already adequately addressed in the 2003 OCGP EIR, or any substantial increase in the severity of previously identified significant effects, or any change in circumstances, and that there was no new information of substantial importance.

2011 Supplemental Environmental Impact Report to the 2003 OCGP EIR

Between 2003 and 2011, the City made the above-described changes to residential and non-residential development entitlements for the Approved Project Site. The 2011 Supplemental Environmental Impact Report (“2011 SEIR”) was certified by the City on August 30, 2011 for the purpose of modifying the project analyzed in the 2003 OCGP EIR and Addenda Nos. 1-7 by: (1) locating 1,100 low-density residential units, previously located within Districts 5 and 7, in the locations depicted on the associated Vesting Tentative Tract Maps (“VTTMs”), and changing the General Plan land use designation and the associated zoning of these units from Low Density (0-5 du/ac) to Multi-Use (0-40 du/ac); (2) locating 1,500 residential units, previously located in the portion of the Transit Oriented District (“TOD”) located within Existing PAs 30 and 51, to the locations depicted on the VTTMs; (3) locating the 1,269 DB units, which had not previously been located, in the locations depicted on the VTTMs; (4) locating the remaining 1,025 residential units on the VTTMs; (5) transferring non-residential development intensities between certain zones; (6) realigning Ridge Valley and “O” Street at Irvine Boulevard; and (7) other minor text/graphic modifications to the General Plan and Zoning Code.

The entitlements that implemented the above are as follows:

- General Plan Amendment
- Zone Change
- 2nd Amendment to VTTM 17008
- Amendments to Master Landscape and Trails Plan
- 2nd Amendment to Vesting Tentative Tract Map 17283
- Master Plan and Park Plan for District 1-North
- Vesting Tentative Tract Map 17368
- Master Plan and Park Plan for District 1-South
- Vesting Tentative Tract Map 17366
- Master Plan and Park Plan for District 4
- Vesting Tentative Tract Map 17202
- Master Plan and Park Plan for District 7
- Vesting Tentative Tract Map 17364
- Master Plan and Park Plan for District 8

3. Project Description

The 2011 SEIR was also the environmental clearance document for the following:

- 2nd Amended Tentative Parcel Map 2006-271
- Amendment to the Master Affordable Housing Plan to locate the 544 affordable home sites in 2nd Amended VTTM 17283
- First Amendment to the Density Bonus Housing Agreement to implement the changes to the Master Affordable Housing Plan and other minor modifications.

The 2011 SEIR concluded, like the 2003 OCGP EIR and seven Addenda, that with implementation of the project analyzed in the 2011 SEIR, the previously approved project's impacts to Air Quality and Population and Housing impacts would remain significant and unavoidable, even after mitigation. The impacts to Transportation/Traffic would remain significant and unavoidable, even after mitigation, but only if certain mitigation measures requiring improvements that are within the responsibility and jurisdiction of a public agency over which the City has no control, are not implemented for reasons beyond the City's control.

Addendum No. 8 to the 2003 OCGP EIR.

Addendum No. 8, which was approved by the City on October 20, 2011, analyzed minor modifications to the approved OCGP Master Plan and the Park Design Review, which were associated with implementation of the Western Sector Park Development Plan Phase I ("Western Sector Park Development Plan Project"). The minor modifications proposed transferring non-residential square footage from the northeastern area to the southwestern area of the Great Park; removing the Air Museum and Concessions/Retail, and replacing them with the Artist in Residency Facility, the proposed Community Ice Facility, and the proposed Nature Education Garden; and replacing the existing Air Museum Hangar with Hangar 233. The Western Sector Park Development Plan Project was approved by the Great Park Board and the City on October 20, 2011.

Addendum No.8 concluded that, as designed, the matters discussed immediately above would not result in any additional significant environmental effects not already adequately addressed in the 2003 OCGP EIR and 2011 SEIR, or any substantial increase in the severity of previously identified significant effects, or any change in circumstances, and that there was no new information of substantial importance.

3.3.2 Description of the 2012 Modified Project

The 2012 Modified Project changes the 2011 Approved Project as follows:

- Combines Existing PAs 30 and 51, and the TCA Parcel, into a single PA that will be designated "Combined PA 51";
- Rezones property in Districts 2, 3, and 6 from 3.2 Transit Oriented Development, 4.3 Vehicle Related Commercial, and 5.4 B General Industrial to 8.1/8.1B Trails and Transit Oriented Development.

3. Project Description

- Relocates a 132-acre portion of the Approved Wildlife Corridor Feature known as Segments 2 and 3 (the “Relocated Wildlife Corridor Feature”), to a location adjacent to the Borrego Canyon Channel within District 5 and 6.
- Rezones 13-acres in District 6 (formerly District 9) from its current 1.1 Agriculture zoning to 1.4 Preservation to accommodate the Relocated Wildlife Corridor Feature.
- Rezones the City Parcels from 3.2 Transit Oriented Development to 8.1 Trails and Transit Oriented Development.
- Updates the General Plan land use designation and zoning designation for the TCA Parcel to Orange County Great Park and 8.1 TTOD, respectively.
- Amends the Master Plan of Arterial Highways, Figure B-1, to eliminate the extension of Rockfield Boulevard from the eastern boundary of the Proposed Project Site to Marine Way once the Orange County Transportation Authority (OCTA) has approved this proposed amendment to the countywide Master Plan of Arterial Highways (see Figure 3-4, *Proposed MPAH Amendment*).
- Amends the City General Plan and Zoning Ordinance to allow the following:
 - 3,412 residential units within Combined PA 51, in addition to the 4,894 units already approved by the City and located in Districts 1 North, 1 South, 4, 7, and 8.
 - Modify non-residential uses within Combined PA 51 to allow:
 - 3,364,000 square feet of Medical and Science.
 - 1,318,200 square feet of Multi-Use. The 2012 Modified Project includes an option to convert up to 535,000 square feet of the proposed Multi-Use intensity to residential intensity for up to an additional 889 dwelling units within District 6 and Lot 48 of 2nd Amended VTTM 17008, subject to a vehicle trip limit.
 - 220,000 square feet of Community Commercial.
- Grants, pursuant to State law, up to 1,194 additional DB units (35% of the proposed additional 3,412 multi-use residential units) plus up to 311 additional DB units associated with the optional conversion of up to 535,000 square feet of non-residential Multi-Use intensity to residential intensity and granted pursuant to State law.
- Encourages Accessory Retail, as defined in the City of Irvine Zoning Code, within Combined PA 51.

The 2012 Modified Project consists of 4,606 dwelling units (3,412 base units and 1,194 DB units). The 2012 Modified Project also includes the option to convert up to 535,000 square feet of non-residential Multi-Use to up to 889 base dwelling units and 311 DB units, granted pursuant to State law. These are in addition to the already approved 4,894 dwelling units.

The 2012 Modified Project proposes to relocate certain portions of the Approved Wildlife Corridor Feature. The Approved Wildlife Corridor Feature is a design feature included in the OCGP Master Plan that connects established habitat preserve areas in the central and coastal subareas of the Orange County Central Coastal NCCP/HCP, and is intended to provide habitat for, and facilitate movement of four target

3. Project Description

species: Bobcat (*Lynx rufus*), Coyote (*Canis latrans*), Coastal California Gnatcatcher (*Poliophtila californica californica*), and Least Bell's Vireo (*Vireo bellii pusillus*). The Approved Wildlife Corridor is comprised of five "segments." Segment 1 is located north of Irvine Boulevard,. Segments 2 through 5 of the Approved Wildlife Corridor Feature are located within Existing PA 51 and Existing PA 30. Segments 2 and 3 of the Approved Wildlife Corridor Feature, which the 2012 Modified Project proposes to relocate, consist of 132 acres of land owned by the City of Irvine.

The 2012 Modified Project proposes to relocate Segments 2 and 3 of the Approved Wildlife Corridor Feature to a location adjacent to Borrego Canyon Channel within Districts 5 and 6, as shown on Figure 3-5, *Proposed Wildlife Corridor Relocation*. The relocated segments of the Approved Wildlife Corridor Feature total 132 acres, and the 2012 Modified Project proposes to rezone these segments currently in Districts 5 and 6 from 8.1 TTOD to 1.4 Preservation in their new location. Concurrently, the 2012 Modified Project proposes to incorporate the area currently approved for Segments 2 and 3 of the Approved Wildlife Corridor Feature into Districts 5 and 6, and to rezone the area 8.1 TTOD.

The Relocated Wildlife Corridor Feature would provide habitat for, and facilitate movement of the same four target species as the Approved Wildlife Corridor Feature: Bobcat, Coyote, Coastal California Gnatcatcher, and Least Bell's Vireo. The Relocated Wildlife Corridor Feature would range in width from approximately 500 to 1,000 feet, with an average width of more than 600 feet. Road and/or trail crossings may cross the Relocated Wildlife Corridor Feature, but would be designed with sufficient clearance to allow for free passage of the target species while discouraging wildlife from crossing at grade. Storm water flows from development of areas adjacent to the western side of the Relocated Wildlife Corridor Feature may be discharged into the Relocated Wildlife Corridor Feature so long as they are first treated pursuant to applicable water quality regulatory requirements and can be introduced without requiring artificial channel stabilization. The Relocated Wildlife Corridor Feature would be planted with native vegetation, which may include mulefat scrub, southern willow scrub, coastal sage scrub, cactus scrub, needlegrass grasslands and screening plantings. Earthen berms and screening vegetation would be installed along the eastern and western edges of the Relocated Wildlife Corridor Feature as necessary to provide screening, to reduce visibility and human access into the corridor, and to reduce light spillage and ambient noise within the corridor.

In addition, the 2012 Modified Project includes two options for the "Main Street" development along Trabuco Road east of "O" Street. Option 1, which was studied in the 2011 SEIR, includes Community Commercial and Multi-Use north of Trabuco Road with Residential south of Trabuco Road in District 1 South. Option 2, which is studied in this DSSEIR, will include Residential north of Trabuco Road with Community Commercial, Multi-Use, and Residential south of Trabuco Road in District 1 South. Option 1 was analyzed in the 2011 SEIR within the context of the other entitlements that were part of the 2011 SEIR Approved Project. This DSSEIR studies Option 1 in the context of the changes proposed as part of the 2012 Modified Project. Both Options will include a 2,600 student high school in District 5.

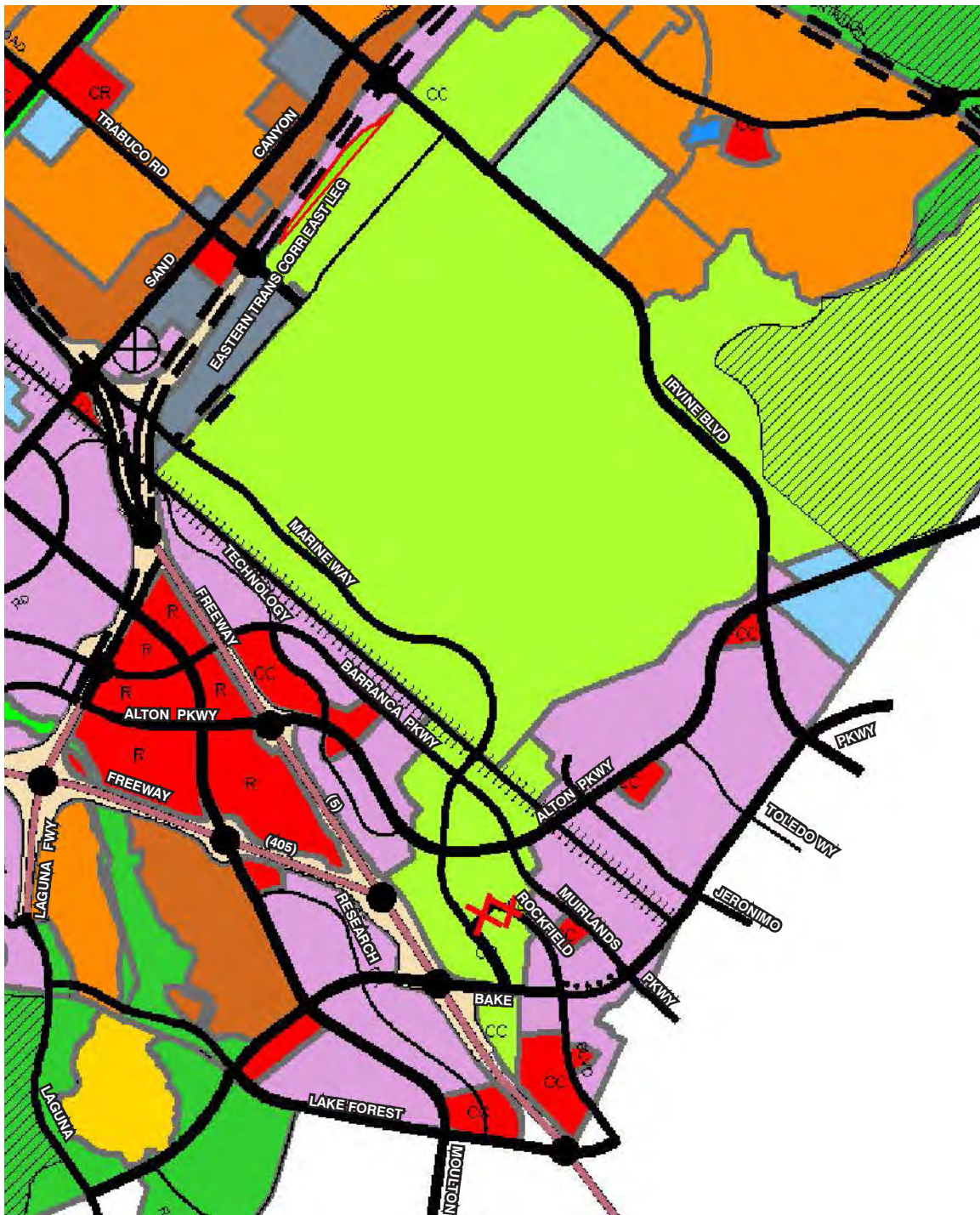
The 2012 Modified Project also includes implementation of recreational facilities in the previously approved Sports Park District of the Orange County Great Park (Great Park).

The 2012 Modified Project incorporates the Mitigation Measures recommended by the 2011 Certified EIR and adopted by the City in the Mitigation Monitoring and Reporting Program for the 2011 Approved Project.

The 2012 Modified Project also incorporates the Project Design Features described below.

3. Project Description

Proposed MPAH Amendment



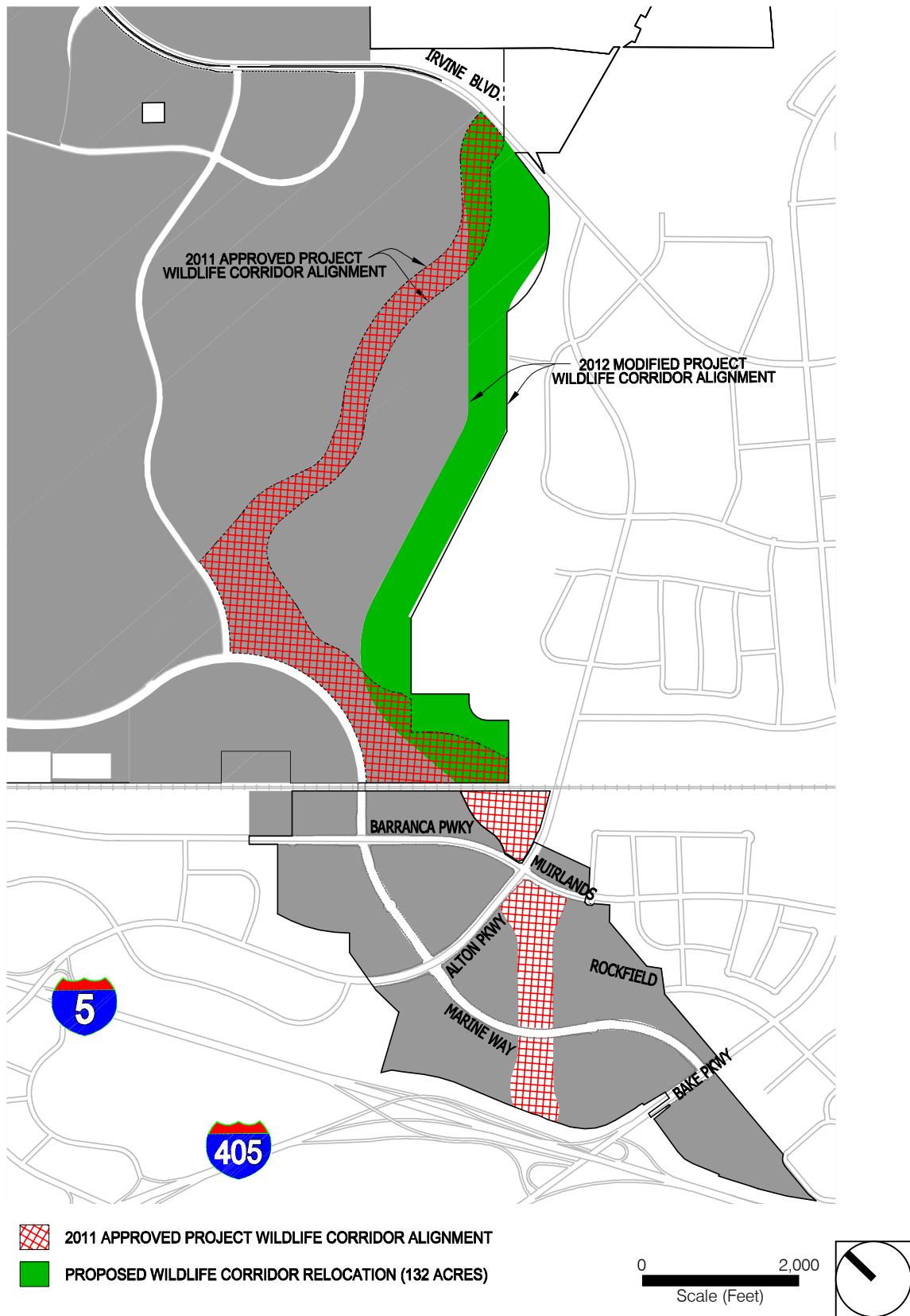
— Proposed Amendment to Master Plan of Arterial Highways (MPAH) - Elimination of Rockfield Boulevard Extension

0 1
Scale (Miles)



3. Project Description

Proposed Wildlife Corridor Relocation



3. Project Description

General Plan Amendments

The General Plan Amendment application requests the following in Existing PAs 30 and 51: (1) consolidation of Existing PAs 30 and 51 and the TCA Parcel into one PA to be designated as “Combined PA 51”; (2) amendment of the General Plan maps to reflect a zone change for Districts 2, 3 and 6 from 3.2 Transit Oriented Development, 4.3 Vehicle Related Commercial, and 5.4B General Industrial to 8.1 TTOD; (3) amendment of the General Plan maps to reflect a zone change for District 5, which is currently zoned 8.1 TTOD, and 13-acres in District 6 (formerly District 9), which is currently zoned 1.1 Agriculture, to 1.4 Preservation to accommodate the Relocated Wildlife Corridor Feature; (4) amendment of General Plan Land Use Table A-1 to allow 9,500 dwelling units in the proposed Combined PA 51 (reflecting the inclusion of the previously approved 4,894 residential units) with an option to convert up to 535,000 square feet of non-residential Multi-Use to up to an additional 889 dwelling units (and 311 DB units) for a revised total up to 10,700 dwelling units; and (5) amendment of the Master Plan of Arterial Highways, Figure B-1, to eliminate the extension of Rockfield Boulevard from the eastern project boundary to Marine Way once the proposed amendment to the countywide Master Plan of Arterial Highways (MPAH) is approved by the OCTA.

The proposed text and table modifications for the General Plan generally consist of the following:

- Revise General Plan Land Use Table A-1 and associated footnotes to modify the distribution of residential units.
- Revise General Plan Land Use Tables A-1 and A-2 to combine Existing PAs 30 and 51 into one PA, Combined PA 51.
- Delete references to Existing PA 30 throughout the General Plan.
- Revise General Plan Table A-1 and associated footnotes to allow a total of 9,500 dwelling units in Combined PA 51 with an option to convert up to 535,000 square feet of non-residential Multi-Use to up to an additional 889 dwelling units (and 311 DB units) for a revised total of up to 10,700 dwelling units in Combined PA 51.
- Amend General Plan maps and figures to reflect the zone changes proposed by the 2012 Modified Project.
- Revisions to General Plan Land Use Table A-2 and associated footnotes to modify the land use acreage distribution.
- Amend General Plan Circulation Element, Figure B-1, and other General Plan Maps as necessary, to eliminate the extension of Rockfield Boulevard from the eastern project boundary to Marine Way once the Orange County Transportation Authority (OCTA) has approved this proposed amendment to the countywide Master Plan of Arterial Highways.
- Modify General Plan Objective B-1 to identify locations where LOS E may be considered acceptable, as shown on Figure 3-6, *Proposed Locations Where LOS E May Be Acceptable*, of this DSSEIR.

3. Project Description

- Amend General Plan Figure G-1 to add the location of a 2,600 student high school within District 5.
- Revise Figure A-2 and Figure C-2 to reflect the deletion of Existing Planning Area 30.
- Revise Figure L-2 to depict the Relocated Wildlife Corridor Feature.
- Other minor modifications as necessary to implement the 2012 Modified Project.

Zoning Ordinance Amendments

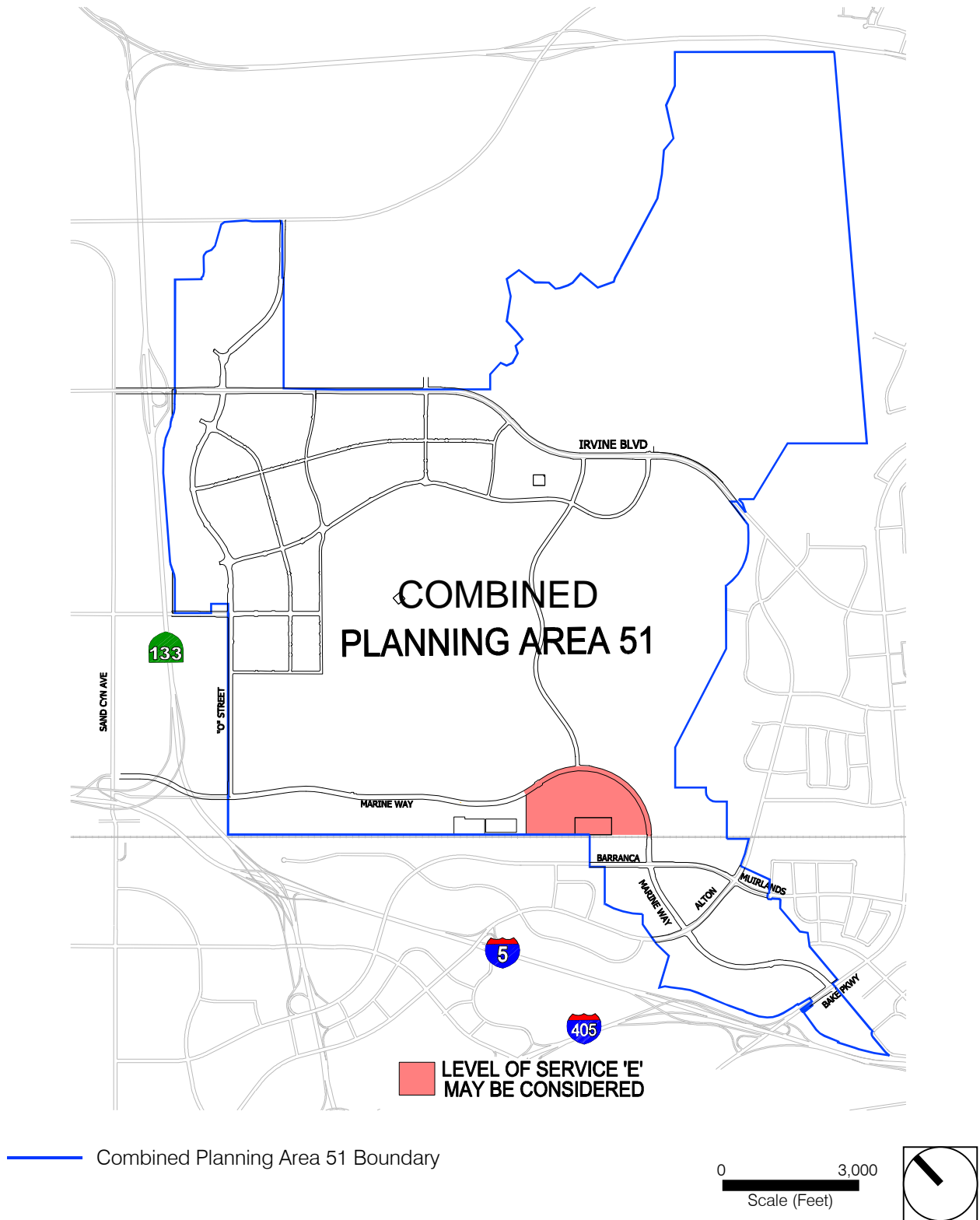
Consistent with the goal of unified land use and development regulations, the 2012 Modified Project proposes to rezone property located in Districts 2, 3, and 6, the City Parcels, and the TCA Parcel, to the 8.1 Trails and Transit Oriented Development zoning designation. In addition, 13-acres in District 6 (formerly District 9) that are currently zoned 1.1 Agriculture will be rezoned to 1.4 Preservation to accommodate the Relocated Wildlife Corridor Feature. The existing zoning is shown on Figure 3-7, *Existing Zoning*, and proposed zone changes are shown on Figure 3-8, *Proposed Zone Changes*. Proposed zoning is shown on Figure 3-9, *Proposed Zoning*.

The 2012 Modified Project generally proposes the following Zoning Ordinance text amendments:

- Integrate certain conditional uses (manufacturing (light), mini warehouse, recreational vehicle storage (public), vehicle assembly, vehicle body, repair, paint or restoration, and vehicle sales) and permissive uses (vehicle repair and detailing, mobile and warehousing, storage and distribution) found in the 3.2 Transit Oriented Development, 4.3 Vehicle Related Commercial, and 5.4 General Industrial zones into the 8.1 Trails and Transit Oriented Development zone, as appropriate;
- Modify the 8.1/8.1B Trails and Transit Oriented Development maximum site coverage standards (Section 3-37-39(G)) to permit unlimited site coverage outside setback areas within ½ mile of a train station or transportation center;
- Modify the 8.1/8.1B Trails and Transit Oriented Development maximum site building height standards (Section 3-37-39(H)) to allow unlimited building height within ½ mile of a train station or transportation center and building heights of 90 feet for hotel/hospitality uses;
- Modify Section 3-37-39 to change residential shelter from a conditional use to a permitted use in the 8.1 Trails and Transit Oriented District zoning district;
- Delete Chapter 9-30 due to the elimination of Existing PA 30 (which will merge with Existing PA 51 into one cohesive planning area, Planning Area 51);

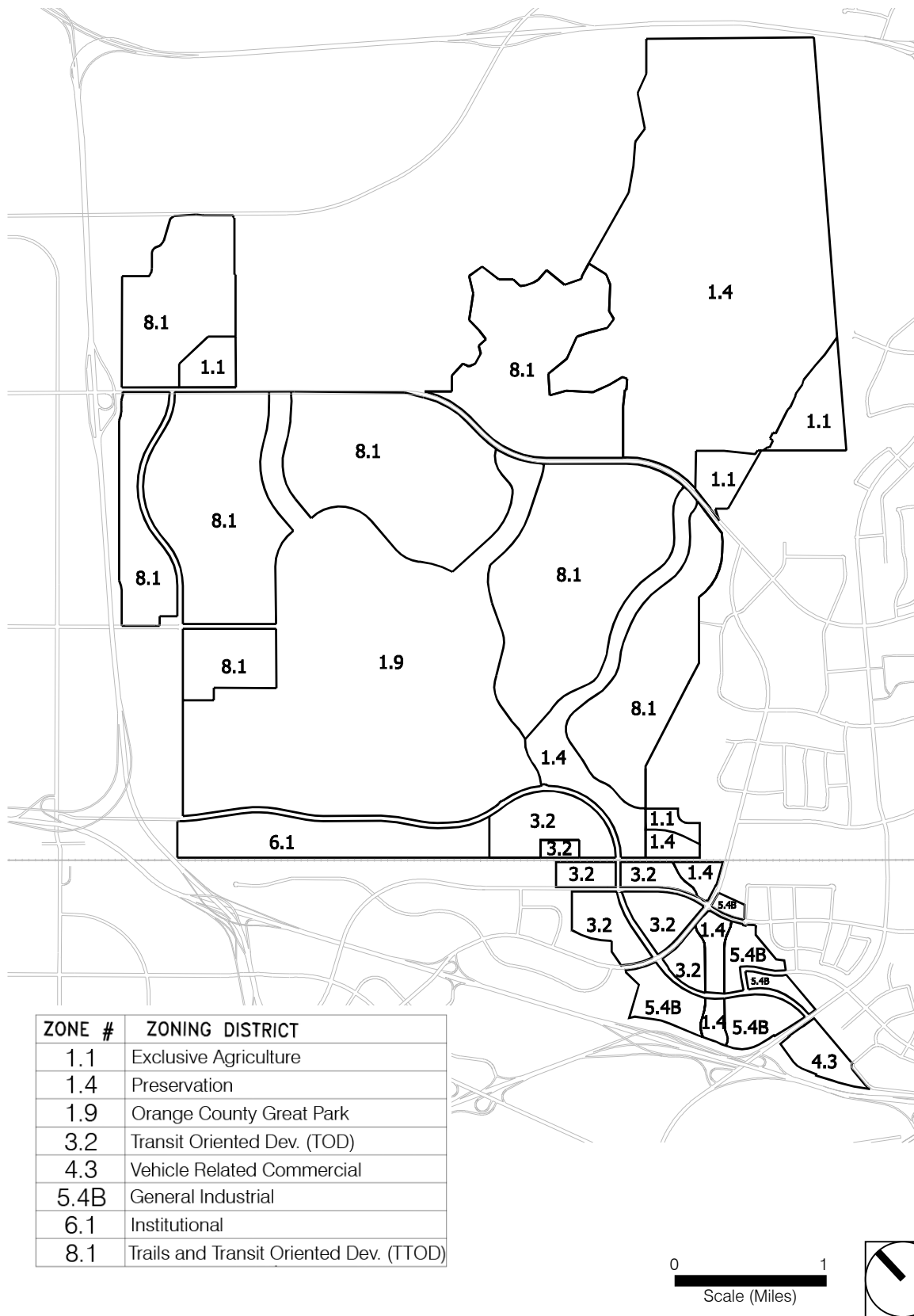
3. Project Description

Proposed Locations where LOS E May Be Acceptable



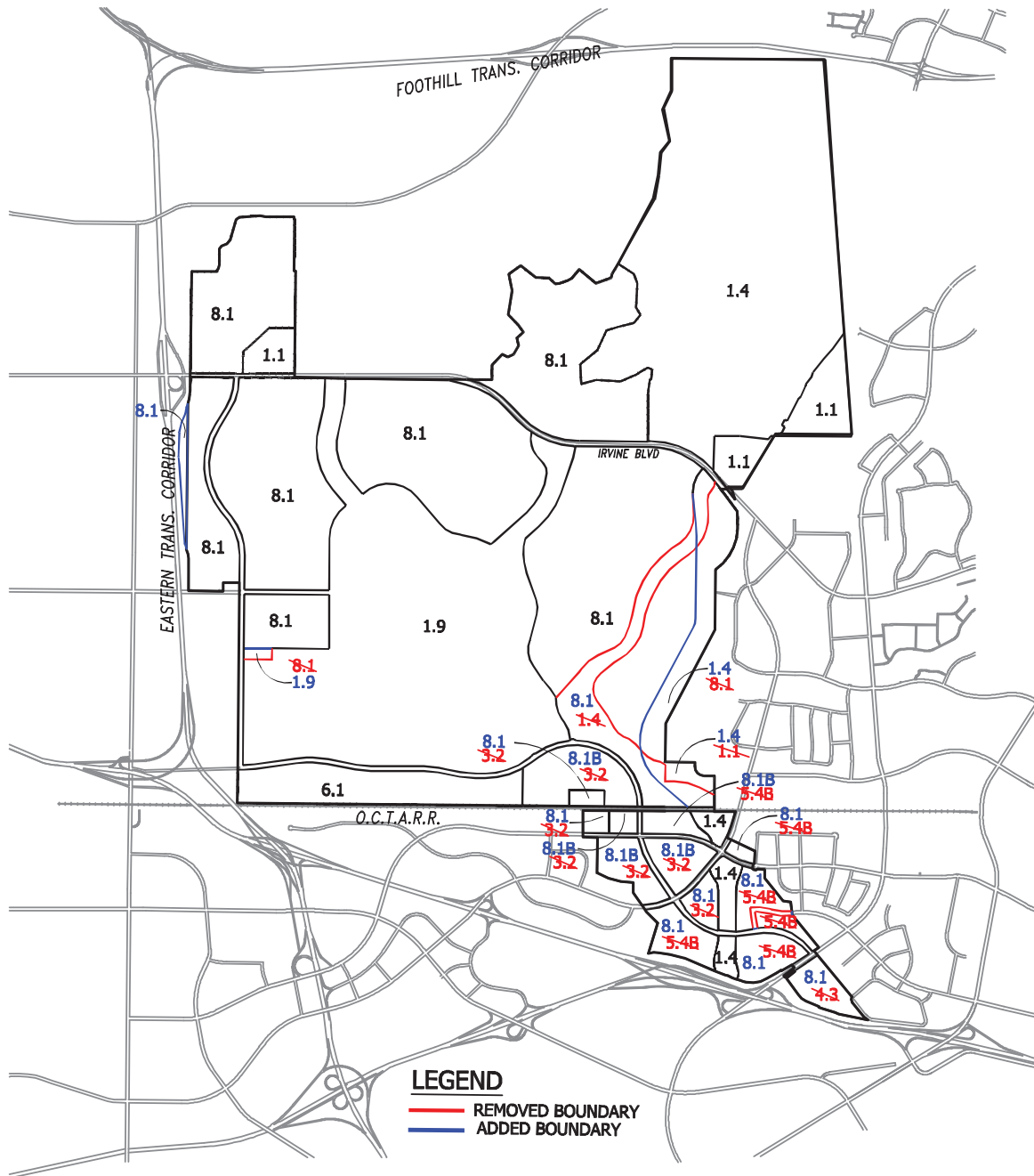
3. Project Description

Existing Zoning



3. Project Description

Proposed Zone Changes



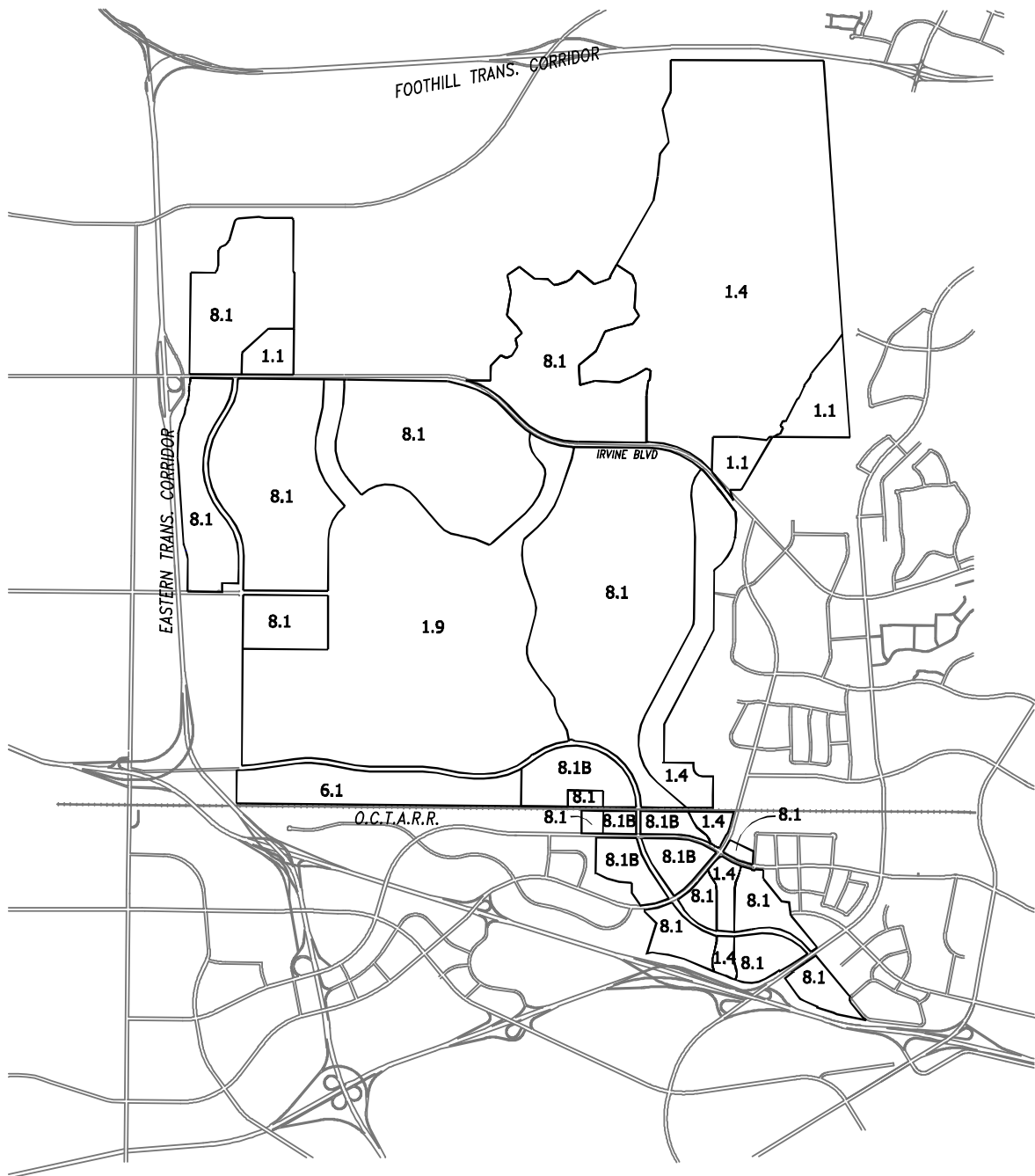
ZONE #	ZONING DISTRICT	ZONE #	ZONING DISTRICT
1.1	Exclusive Agriculture	3.2	Transit Oriented Development
1.4	Preservation	6.1	Institutional
1.9	Orange County Great Park	8.1	Trails and Transit Oriented Dev. (TTOD)

0 4,000
Scale (Feet)



3. Project Description

Proposed Zoning



ZONE #	ZONING DISTRICT	ZONE #	ZONING DISTRICT
1.1	Exclusive Agriculture	6.1	Institutional
1.4	Preservation	8.1/8.1B	Trails and Transit Oriented Dev. (TTOD)
1.9	Orange County Great Park		

0 4,000
Scale (Feet)



3. Project Description

- Modify Chapter 9-51 to reflect the consolidation of Existing PAs 30 and 51, including, but not limited to:
 - Modify Section 9-51-3, the Statistical Analysis and Map to reflect the changes in land use and acreage intensities
 - Modify the maximum average daily traffic (ADT) in Combined PA 51 to reflect the sum of the maximum ADT currently permitted in Existing PAs 30 and 51.
- Modify Chapter 9-51 to permit an additional 3,412 dwelling units and an additional 1,194 DB units in Combined PA 51, with an option to convert up to 535,000 square feet of non-residential Multi-Use to up to 889 base dwelling units and 311 DB units, granted pursuant to State law,:
- Modify Chapter 9-51 to allow the following revised non-residential intensities in Combined PA 51:
 - 3,364,000 square feet of Medical and Science
 - 1,318,200 square feet of Multi-Use. The 2012 Modified Project includes an option to convert up to 535,000 square feet of the proposed non-residential Multi-Use intensity to residential intensity for up to an additional 889 base dwelling units and 311 DB units within District 6 and Lot 48 of 2nd Amended VTTM 17008, subject to a vehicle trip limit.
 - 220,000 square feet of Community Commercial
- Add Section 9-51-6 (Q) regarding district character that discusses anticipated density, intensity, mix of land uses, and vehicular, bicycle, and pedestrian networks;
- Add Section 9-51-6 (S) regarding optional conversion (see description above); and
- Add Section 9-51-6 (U) regarding information that will be provided to the City regarding land sales; and
- Modify Section 9-51-6 (D) regarding development monitoring and tracking.
- Add Section 9-51-6(T) regarding the circumstances under which additional traffic analysis may be required.
- Other modifications as necessary to implement the 2012 Modified Project.

Project Design Features

The following project design features (PDFs) have been incorporated into the 2012 Modified Project and have been assumed in the analyses of the 2012 Modified Project that are contained in Chapter 5, *Environmental Analysis*, where appropriate. With the exception of PDFs 8-1, 10-1, 10-2 and 12-1, these PDFs were included in the 2011 Certified EIR for the 2011 Approved Project, however, they have been renumbered. PDFs 4-3 and 4-8 have been revised to reflect the subsequent adoption of the California

3. Project Description

Green Building Standards Code and the Energy Commission's 2013 Building Energy Efficiency Standards (Title 24). PDFs 8-1, 10-1, 10-2, and 12-1 are new PDFs associated with the 2012 Modified Project that were not previously incorporated into the 2011 Approved Project.

- PDF 4-1 **Compact/Mixed-Use Development:** The California Energy Commission (CEC) considers compact development forms beneficial for minimizing energy consumption that leads to greenhouse gas emissions. In fact, the CEC's report on the connections between land use and climate change identifies density as the project feature most predictive of the number of vehicle trips and vehicle miles traveled ("VMT") by project occupants. Like the 2011 Approved Project, the 2012 Modified Project increases the density of development on the Proposed Project Site. Doing so will tend to reduce VMT on a local and regional basis. For the analyses in this DSSEIR, it was assumed that there would be only a 25% reduction in VMT, which is within the range observed in Southern California.
- PDF 4-2 **High Rate of Internal Trip Capture:** With the inclusion of a mix of land uses including office, commercial, industrial, and residential in the Proposed Project Site, the 2012 Modified Project reduces trips outside the Proposed Project Site. This reduces trip length and congestion on the local circulation system outside the Proposed Project Site.
- PDF 4-3 **Low-Flow Fixtures:** The 2012 Modified Project incorporates low-flow water fixtures that will meet the requirements of the California Green Building Standards Code. Prior to issuance of building permit, the Applicant or its successor shall submit evidence to the satisfaction of the Director of Community Development that toilets, urinals, sinks, showers, and other water fixtures installed on-site meet the requirements of the California Green Building Standards Code.
- PDF 4-4 **Landscaping and Irrigation Systems:** The 2012 Modified Project incorporates automated, high-efficiency landscaping irrigation systems on all master landscaped areas that reduce water use, such as evapotranspiration "smart" weather-based irrigation controllers, and bubbler irrigation; low-angle, low-flow spray heads; moisture sensors; and use of a California-friendly landscape palette. Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the City's Director of Community Development that such landscaping irrigation systems will be installed so as to make the 2012 Modified Project consistent with the intent of the California Water Conservation in Landscaping Act of 2006 ("AB 1881"), including provisions to reduce the wasteful, uneconomic, inefficient, and unnecessary consumption of water.
- PDF 4-5 **Use of Reclaimed Water on All Master Landscaped Areas:** Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the City's Director of Community Development and the Irvine Ranch Water District ("IRWD") that the landscape plans incorporate the use of reclaimed water in all master landscaped areas, including master landscaped commercial, multifamily, common, roadways, and park areas. Master landscapes shall also incorporate weather-based controllers and efficient irrigation system designs to reduce overwatering, combined with the application of a California-friendly landscape palette.
- PDF 4-6 **Material Recovery:** The 2012 Modified Project incorporates measures to reduce waste generated by Proposed Project Site residents, occupants and visitors, and to encourage recycling of solid wastes, utilizing the Orange County Integrated Waste Management

3. Project Description

Department's material recovery facilities to recycle glass, plastic, cans, junk mail, paper, cardboard, greenwaste (e.g., grass, weeds, leaves, branches, yard trimmings, and scrap wood), and scrap metal. Future employees, residents, and customers would participate in these programs. These measures include the requirement to include on-site recycling facilities at all commercial, retail, industrial, and multi-family residential developments. In addition, educational materials identifying available recycling programs shall be distributed to all land uses, including single-family residential.

- PDF 4-7 **Energy Star Appliances:** EnergyStar appliances (excluding refrigerators), such as dishwashers, clothes washers, clothes dryers, air conditions, furnaces, and water heaters, shall be offered or installed in all residential dwelling units.
- PDF 4-8 **Building Energy Efficiency:** Residential dwellings and non-residential buildings will be constructed so that they achieve 15 percent higher energy efficiency than the applicable standards set forth in the 2008 California Building and Energy Efficiency Standards (Title 24, Part 6 of the California Building Code) or meet the standards in effect at the time of issuance of building permit. The Energy Commission's 2013 Building Energy Efficiency Standards are 25 percent more efficient than the 2008 standards for residential construction and 30 percent more efficient for nonresidential construction. The 2013 Energy Efficiency Standards, which take effect on January 1, 2014, offer builders more efficient windows, insulation, lighting, ventilation systems and other options that would reduce energy consumption in homes and businesses.
- PDF 4-9 **Carbon Sequestration:** The 2012 Modified Project incorporates landscaping and a plant palette that will foster carbon sequestration within the Proposed Project Site that is comparable to the landscaping and plant palette that was already incorporated into the 2011 Approved Project.
- PDF 4-10 **Softscape Landscaped Areas:** Consistent with the 2011 Approved Project, the 2012 Modified Project reduces softscape (e.g., plants/horticultural elements of landscape design) landscaped areas by 28 percent as compared to the default assumption in CalEEMod.
- PDF 8-1 **Construction Noise:** Prior to issuance of grading permits, the project applicant or its successor shall incorporate the following measures as a note on the grading plan cover sheet to ensure that the greatest distance between noise sources and sensitive receptors during construction activities has been achieved, and that construction noise has been reduced.
- During construction activities, all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, consistent with manufacturers' standards. All stationary construction equipment shall be placed so that emitted noise is directed away from the noise-sensitive receptors nearest the Proposed Project Site boundaries.
 - Equipment shall be staged in areas that will create the greatest distance between construction-related noise sources and the noise-sensitive receptors nearest the Proposed Project Site during all project construction.
 - All construction-related activities shall be restricted to the construction hours outlined in the City's Noise Ordinance (Municipal Code Section 6-8-205).

3. Project Description

- Haul truck and other construction-related trucks traveling to and from the Proposed Project Site shall be restricted to the same hours specified for the operation of construction equipment. To the extent feasible, haul routes shall not pass directly by sensitive land uses or residential dwellings.
- Where construction will occur adjacent to any developed/occupied noise-sensitive uses, a construction-related noise mitigation plan shall be submitted the Director of Community Development for review and approval prior to the issuance of grading permits. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the 2012 Modified Project, through the use of such methods as: (1) temporary noise attenuation fences; (2) preferential location of equipment; and (3) use of current technology and noise-suppression equipment.
- Construction of planned sound walls that have been incorporated into the project design shall be installed prior to construction of the building foundation; or temporary sound blankets (fences typically composed of poly-vinyl-chloride-coated outer shells with absorbent inner insulation) shall be placed along the boundary of the Proposed Project Site facing the nearest noise-sensitive receptors during construction activities.

PDF 10-1 The Relocated Wildlife Corridor Feature will be designed and planted in such a manner as to ensure that the planting plan does not create a fire hazard for adjacent development. Maintenance of vegetation within the Relocated Wildlife Corridor Feature is not anticipated, but would be allowed as needed for fire control. Final approval of the planting schemes and palettes will require approval from the Orange County Fire Authority.

PDF 10-2 Appropriate edge effect characteristics (e.g. earthen berms, vegetative or other barriers) will be implemented as necessary along the edges of the Relocated Wildlife Corridor Feature in order to reduce visibility and human access into the corridor, and to reduce light spillage and ambient noise within the corridor.

PDF 12-1 The 2012 Modified Project's optional conversion of non-residential square footage to residential units, if implemented, will be subject to a traffic analysis to assess traffic impacts, if any, due to the specific changes in land use and will include a reduction in allowable Multi-Use intensity in terms of equivalent traffic generation (excluding DB units) based on AM peak, PM peak, and ADT. Conversions to other non-residential uses within the Multi-Use category, if implemented, will also be subject to a traffic analysis to assess traffic impacts, if any, and shall be reflected in terms of equivalent traffic generation based on AM peak, PM peak, and ADT.

3.4 INTENDED USES OF THE DSSEIR

This DSSEIR examines the potential environmental impacts of the 2012 Modified Project as compared to the 2011 Approved Project, including the various actions by the City and other agencies that are necessary to implement the 2012 Modified Project. It is the intent of this DSSEIR to enable the City, responsible agencies, and interested parties to evaluate the environmental impacts of the 2012 Modified Project as compared to those of the 2011 Approved Project, thereby enabling them to make informed decisions with respect to the requested entitlements. The anticipated approvals required for the 2012 Modified Project are as follows:

3. Project Description

<i>Lead Agency</i>	<i>Action</i>
City of Irvine	<ul style="list-style-type: none"> • Certification of the Second Supplemental Environmental Impact Report (SCH#2002101020) • Approval of Zone Change 00537029-PZC, General Plan Amendment 00537028-PGA and related amendments
<i>Responsible Agencies</i>	<i>Action</i>
California Regional Water Quality Control Board, Region 8, Santa Ana	<ul style="list-style-type: none"> • Issue a National Pollution Discharge Elimination System (NPDES) Permit for construction activities and/or Stormwater Pollution Prevention Plan
South Coast Air Quality Management District	<ul style="list-style-type: none"> • Issue any needed Air Quality Permits for development within the Great Park Neighborhoods
Irvine Ranch Water District	<ul style="list-style-type: none"> • Approval of any necessary sewer or water facilities upgrades necessary to serve future development • Approval of modification to Sub-Area Master Plan (SAMP) • Approval of water quality (e.g., Natural Treatment System (NTS)) facilities
California Department of Transportation ("Caltrans")	<ul style="list-style-type: none"> • Activities located within Caltrans right-of-way would require an Encroachment Permit and Caltrans Statewide NPDES Permit from Caltrans
Orange County Flood Control Flood Control District ("OCFCD")	<ul style="list-style-type: none"> • Encroachment permits may be required if any improvements are proposed within OCFCD right-of-way • Approval of modification to Master Plan of Drainage
Orange County Transportation Authority (OCTA)	<ul style="list-style-type: none"> • Approval of MPAH Amendment
Army Corp of Engineers	<ul style="list-style-type: none"> • Amendment to the approved Habitat Mitigation and Monitoring Plan ("HMMP"), if necessary
California Department of Fish and Game	<ul style="list-style-type: none"> • Amendment to the approved HMMP, if necessary

3.4.1 Subsequent Discretionary and Ministerial Actions

In addition to the discretionary actions listed above, subsequent approvals by the City that may rely on this DSSEIR include:

- Approval of tentative tract maps
- Approval of master plans
- Approval of park plans
- Approval of park designs
- Approval of conditional use permits
- Approval of amendments to Master Affordable Housing Plan and DB Housing Agreement
- Amendment of OCGP Master Plan
- Approval of non-residential master plans
- Approval of grading and building permits
- Approval of agreements relating to the construction of Great Park facilities and/or infrastructure
- Approval of real estate transfers necessary to facilitate the Relocated Wildlife Corridor Feature
- Regulatory or other actions implementing mitigation measures or actions

3. Project Description

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2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (“CEQA”), Public Resources Code sections 21000 *et seq.*, requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority prior to taking action on those projects. This Draft Second Supplemental Environmental Impact Report (“DSSEIR”) has been prepared to satisfy CEQA, and the State CEQA Guidelines (“CEQA Guidelines”), Title 14 of the California Code of Regulations, Chapter 3, Section 15000 *et seq.*, and the City of Irvine (“City”) CEQA Procedures. An Environmental Impact Report (“EIR”) is a public informational document designed to provide decision makers and the public with an analysis of the environmental effects of a proposed project, to indicate possible ways to reduce or avoid significant effects, and to describe reasonable alternatives to a project. An EIR must also disclose significant environmental impacts that cannot be avoided; growth-inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable probable future projects.

Approval of the Heritage Fields Project 2012 General Plan Amendment and Zone Change (the “2012 Modified Project”) requires discretionary actions by one or more public agencies. The City is the lead agency for the 2012 Modified Project. Pursuant to CEQA Section 21067, the lead agency means “the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment.” As the lead agency, the City has the responsibility for, among other things, preparing and certifying an SSEIR that analyzes the potential environmental impacts of the 2012 Modified Project, as compared to the 2011 Approved Project, identifying feasible mitigation measures that could avoid or minimize the 2012 Modified Project’s significant environmental impacts, describing and analyzing feasible alternatives to the 2012 Modified Project, adopting findings with regard each significant effect of the 2012 Modified Project, providing a Statement of Overriding Considerations for all environmental impacts of the 2012 Modified Project that cannot be mitigated to a less than significant level, and adopting a Mitigation Monitoring and Reporting Program to ensure that all required mitigation measures are implemented during the lifetime of the 2012 Modified Project.

As discussed in Section 3.3.1, *Previous Environmental Documentation*, of this DSSEIR, in 2003, the City certified the Final Program Environmental Impact Report for the Orange County Great Park (“Great Park”), SCH No. 2002101020, dated May 2003 (“2003 OCGP EIR”), which analyzed the environmental effects of the development of 3,625 residential units and 6,585,594 million square feet of non-residential development (including Great Park and other non-Great Park Neighborhood uses) on a portion of the former Marine Corps Air Station (“MCAS”) El Toro site. Subsequently, the City prepared, and the City Council of the City of Irvine (“City Council”) approved, seven addenda to the 2003 OCGP EIR (“Addenda”), which analyzed revisions made to the project that was analyzed in the 2003 OCGP EIR. In addition, in September 2011 the City Council certified a Supplemental EIR (“2011 SEIR”), which analyzed a total of 4,894 dwelling units and 6,585,594 square feet of non-residential uses (including Great Park uses and other non-Great Park Neighborhood uses) on a portion of the former MCAS El Toro site. The City Council thereafter approved an eighth Addendum in October 2011. The actions analyzed in the 2003 OCGP EIR, the eight Addenda, and the 2011 Supplemental EIR are referred to in this DSSEIR as the “2011 Approved Project.” The 2003 OCGP EIR, the eight Addenda, and the 2011 SEIR are referred to

2. Introduction

together as the “2011 Certified EIR.”¹ The 2011 Certified EIR is incorporated by reference in this DSSEIR. A summary of the 2011 Certified EIR is provided in Section 3.3.1 of this DSSEIR.

The overall purpose of this DSSEIR is to inform the City’s decision makers and the general public whether the 2012 Modified Project, as compared to the 2011 Approved Project, would result in any new significant impacts or an increase in the severity of significant impacts previously identified for the 2011 Approved Project. The 2011 Approved Project is the “baseline” for the analysis in this DSSEIR, and was used in preparing the Initial Study for the 2012 Modified Project, to evaluate the potential incremental impact of the 2012 Modified Project.

As stated in Section 15121(a) of the CEQA Guidelines, the DSSEIR is an “informational document” intended to inform the City, other public agencies with discretionary authority over aspects of the 2012 Modified Project, the general public, the local community, and other organizations, entities and interested persons of the scope of the 2012 Modified Project, the significant environmental effects of the 2012 Modified Project, as compared to the 2011 Approved Project, feasible measures to avoid or minimize the significant effects, and a reasonable range of feasible alternatives to the 2012 Modified Project that would avoid or minimize the significant effects. The City must consider the information in this DSSEIR and make certain findings with respect to each significant effect identified. The City will use the information in the DSSEIR, along with other information received and/or developed during the public review process for the DSSEIR, to determine whether to approve, modify, or not approve the 2012 Modified Project, or a 2012 Modified Project Alternative, and, if approval is granted, to specify applicable and enforceable environmental mitigation measures as part of the 2012 Modified Project approvals. Specific discretionary actions to be reviewed by the City and potential project permits and approvals required from other regulatory agencies for the 2012 Modified Project are described in Section 3.3.2, *Description of the 2012 Modified Project*, and Section 3.4, *Intended Uses of the DSSEIR*, of this DSSEIR.

This DSSEIR, which has been prepared at the direction and under the supervision of the City, has been prepared in accordance with the requirements of:

- CEQA
- State CEQA Guidelines
- City of Irvine CEQA Procedures (adopted by City Council Resolution No. 12-69 on June 12, 2012.)

2.2 NOTICE OF PREPARATION AND INITIAL STUDY

On December 22, 2011, Heritage Fields filed an application concerning the 2012 Modified Project with the City of Irvine Community Development Department, which prompted the initiation of the environmental review process outlined below.

After review of the 2012 Modified Project application, the City determined that a Second Supplemental EIR would be required for the 2012 Modified Project and issued a Notice of Preparation (“NOP”) and Initial Study on April 3, 2012, to the State Clearinghouse, responsible agencies, and interested parties (see Appendix A). A total of six agencies/interested parties responded to the NOP. Comments received during

¹ Please refer to the Table of Contents for a complete List of Defined Terms.

2. Introduction

the NOP review period, which occurred between April 4, 2012 and May 4, 2012, are contained in Appendix B of this DSSEIR. This DSSEIR has taken into consideration all the comments received in response to the NOP.

The NOP process was used to determine scope of the environmental issues to be addressed in this DSSEIR. Based on the NOP and the Initial Study for the 2012 Modified Project, certain environmental categories were identified as having the potential for significant environmental impacts over and above those found for the 2011 Approved Project. Issues identified as Potentially Significant in the Initial Study for the 2012 Modified Project are addressed in detail in this DSSEIR. Issues identified as Less Than Significant or No Impact in the Initial Study are summarized in Chapter 8, *Impacts Found Not to be Significant*. Refer to the Initial Study in Appendix A to this DSSEIR for a discussion of how these initial determinations were made.

Table 2-1 summarizes the comments received from the commenting agencies during the NOP process, along with a reference to the section(s) of this DSSEIR where the issues are addressed.

*Table 2-1
NOP Written Comment Summary*

<i>Commenting Agency/Person</i>	<i>Comment Summary</i>	<i>Issue Addressed In:</i>
April 4, 2012 NOP		
Department of Toxic Substances Control, Greg Holmes, Unit Chief	Potential hazardous materials on-site.	Section 5.5, Hazards and Hazardous Materials.
City of Lake Forest, Cheryl Kuta, AICP, Planning Manager	No comment.	
OCTA, Charlie Larwood, Manager, Transportation Planning	Potential changes to the MPAH should reference the OCTA Guidance document.	Section 5.12, Transportation and Traffic.
City of Santa Ana, Hally Soboleske, Associate Planner	No comment.	
South Coast AQMD, Ian MacMillan, Program Supervisor, CEQA Inter-Governmental Review	Potential impacts related to air quality.	Section 5.3, Air Quality.
University of California, Irvine, Alex Marks, Senior Planner	SSEIR should consider potential impacts to the UC Regent's South Coast Research and Extension Center.	Section 5.7, Land Use and Planning; Section 5.12, Transportation and Traffic.

2.3 DSSEIR SCOPING MEETING

Prior to preparation of this DSSEIR, a public scoping meeting was held on April 19, 2012, at Irvine City Hall. The scoping meeting was held to determine the concerns of responsible and trustee agencies, stakeholders, and the community regarding the 2012 Modified Project. The scoping meeting was attended by various stakeholders, government officials, and one representative from the Irvine Unified School District (IUSD). The only issue raised at the public scoping meeting was related to the provision of IUSD school facilities within the Proposed Project Site. School facilities are addressed in Section 5.11, *Public Services*, of this DSSEIR.

2. Introduction

2.4 SCOPE OF THIS DSSEIR

As described in Section 1.2.2, *Type and Purpose of This DSSEIR*, this DSSEIR has been prepared as a supplement to the 2011 Certified EIR consistent with Public Resources Code Section 21166 and CEQA Guidelines Sections 15162 and 15163. Pursuant to those sections, the DSSEIR analyzes the impacts of the 2012 Modified Project as compared to the 2011 Approved Project.

Under CEQA Guidelines Sections 15126.2 and 15126.4, the DSSEIR must identify any potentially significant adverse impacts of the 2012 Modified Project, as compared to the 2011 Approved Project, and recommend mitigation measures that would reduce those impacts to levels of insignificance or eliminate the impacts altogether. The overall scope of this DSSEIR was determined based upon the City's Initial Study, comments received in response to the NOP, as noted in Section 2.2, and comments received at the public scoping meeting conducted by the City, as outlined in Section 2.3.

The description of the 2012 Modified Project contained in the Project Description (Chapter 3 of this DSSEIR) establishes the basis for analyzing 2012 Modified Project-related environmental impacts as compared to the 2011 Approved Project.

2.4.1 Impacts Unchanged or Considered Less Than Significant

All of the potential impacts within four environmental factors listed in Appendix G of the CEQA Guidelines have been identified as not being significantly affected by the 2012 Modified Project as compared to the 2011 Approved Project and therefore are not discussed in detail in this DSSEIR. Those environmental factors are:

- Biological Resources
- Cultural Resources
- Geology/Soils
- Mineral Resources

2.4.2 Potentially Significant Adverse Impacts

Certain impacts within the following environmental factors could be potentially significant if the 2012 Modified Project is implemented, and therefore those impacts are analyzed in this DSSEIR:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

2.4.3 Unavoidable Significant Adverse Impacts

The 2011 Certified EIR identified for the 2011 Approved Project a total of three significant and unavoidable adverse impacts, as defined by CEQA, relating to Air Quality, Population and Housing, and Transportation/Traffic. This DSSEIR identifies two of the same three significant and unavoidable adverse impacts for the 2012 Modified Project, which remain unchanged from the 2011 Approved Project. The impacts found in this DSSEIR to be significant and unavoidable are:

- Air Quality
- Transportation/Traffic, but only if the mitigation measures in other jurisdictions are not implemented, as described in this DSSEIR

It should be noted that the 2011 Certified EIR concluded that population and housing impacts would be a significant and unavoidable adverse impact of the 2011 Approved Project. However, as described in Section 5.9, *Population and Housing*, of this DSSEIR, impacts related to population and housing are no longer considered significant with implementation of the 2012 Modified Project.

2.5 INCORPORATION BY REFERENCE

All documents cited or referenced are incorporated into the SSEIR in accordance with CEQA Guidelines Sections 15148 and 15150, including but not limited to the following:

- City of Irvine General Plan (as amended).
- City of Irvine Municipal Code (as amended).
- City of Irvine Zoning Ordinance (as amended).
- City of Irvine CEQA Procedures (as amended).
- City of Irvine, Final Program Environmental Impact Report for the Orange County Great Park, SCH No. 2002101020, May 2003. (2003 OCGP EIR)
- City of Irvine, Final Supplemental Environmental Impact Report for the Great Park Neighborhoods Revision to the Heritage Fields Project at the Former Marine Corps Air Station (MCAS) El Toro Base, SCH No. 2002101020, August 2011.
- Addendum No. 1 to the 2003 OCGP EIR (City of Irvine, Orange County Great Park Redevelopment Plan), May 18, 2006.
- Addendum No. 2 to the 2003 OCGP EIR (City of Irvine, 2006 Lifelong Learning District General Plan Amendment and Zone Change), October 24, 2006.
- Addendum No. 3 to the 2003 OCGP EIR (City of Irvine, Master Subdivision Map VTTM 17008 and Related Approvals), May 17, 2007.
- Addendum No. 4 to the 2003 OCGP EIR (City of Irvine, OCGP Master Plan), August 2, 2007.

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- Addendum No. 5 to the 2003 OCGP EIR (City of Irvine, 2008 General Plan Amendment, Zone Change, and Development Agreement), July 22, 2008.
- Addendum No. 6 to the 2003 OCGP EIR (City of Irvine, Amended VTTM 17008 and Related Approvals), October 16, 2008.
- Addendum No. 7 to the 2003 OCGP EIR (City of Irvine, NITM Five Year Review), June 29, 2010.
- Addendum No. 8 to the 2003 OCGP EIR (City of Irvine, OCGP Minor Modification to Master Plan and Park Design Review for Western Sector Park Development Plan), October 20, 2011.
- Southern California Association of Governments, Regional Comprehensive Plan, 2008.
- South Coast Air Quality Management District, Final 2007 Air Quality Management Plan, 2007.
- South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993 (as amended).

In each instance where a document is incorporated by reference for purposes of this DSSEIR, the DSSEIR shall briefly summarize the incorporated document, or briefly summarize the incorporated data if the document cannot be summarized. In addition, the DSSEIR shall explain the relationship between the incorporated part of the referenced document and the DSSEIR.

This DSSEIR relies upon previously adopted regional and statewide plans and programs, agency standards, and background studies in its analyses, such as the City's General Plan, the South Coast Air Quality Management District's ("SCAQMD") Air Quality Management Plan, the SCAQMD CEQA Air Quality Handbook, and the Central/Coastal Natural Communities Conservation Plan/Habitat Conservation Plan ("NCCP/HCP"). Chapter 13, *Bibliography*, provides a complete list of references utilized in preparing this DSSEIR. All of the documents listed in Chapter 13, as well as the aforementioned documents that are incorporated by reference, are available for review at:

City of Irvine Community Development Department
One Civic Center Plaza
Irvine, CA 92623-9575
Contact: **Barry Curtis**, Manager of Planning and Development Services at (949) 724-7453

2.6 FINAL EIR CERTIFICATION

Pursuant to CEQA and the CEQA Guidelines, this DSSEIR is being circulated for public review for a period of 45 days. Interested agencies and members of the public are invited to provide written comments on the DSSEIR. Upon completion of the 45-day review period, the City will review and prepare written responses to each comment as required by CEQA and the CEQA Guidelines. A Final SSEIR ("FSSEIR") will then be prepared, incorporating all of the comments received, written responses to the timely-received comments, and the DSSEIR, along with any changes to the DSSEIR that result from the comments received. The FSSEIR will then be presented to the City for potential certification as the environmental document for the 2012 Modified Project. All persons who comment on the DSSEIR will be notified of the availability of the FSSEIR and of the date of the City of Irvine Planning Commission and City Council public hearings concerning potential certification of the FSSEIR.

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The DSSEIR is available to the general public for review at:

Irvine City Hall
Community Development Department
One Civic Center Plaza
Irvine, CA 92623

University Park Library
4512 Sandburg Way
Irvine, CA 92612

Heritage Park Regional Library
14361 Yale Avenue
Irvine, CA 92604
Katie Wheeler Library
13109 Old Myford Rd
Irvine, CA. 92602

The DSSEIR will also be posted online on the City of Irvine's Web site, www.cityofirvine.org.

All comments received from agencies and individuals on the DSSEIR will be accepted during the 45-day public review period. All comments on the DSSEIR should be sent to:

Barry Curtis, Manager of Planning and Development Services
City of Irvine
Department of Community Development
One Civic Center Plaza
PO Box 19575
Irvine, California 92623-9575
PHONE: (949) 724-7453
FAX: (949) 724-6444
bcurtis@ci.irvine.ca.us

All agencies that submit comments during the 45-day public review period on the DSSEIR will receive written responses to their comments at least 10 days prior to final action on the 2012 Modified Project. If the City Council decides to certify the FSSEIR, the City Council will make the necessary findings required by CEQA and the CEQA Guidelines regarding the extent and nature of the impacts as presented in the FSSEIR. The FSSEIR must be certified by the City prior to making a decision to approve the 2012 Modified Project. Public input is encouraged at all public hearings before the City concerning the 2012 Modified Project.

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2.7 CEQA FINDINGS FOR PROJECT APPROVAL

CEQA and the CEQA Guidelines require that the environmental impacts of a project be examined before a project is approved. Specifically, CEQA Guidelines Section 15091 provides:

- (a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:
 - 1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.
 - 2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
 - 3. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

In addition, for a Supplemental EIR, CEQA Guideline 15163(e) requires:

- (e) When the agency decides whether to approve the project, the decision-making body shall consider the previous EIR as revised by the supplemental EIR. A finding under Section 15091 shall be made for each significant effect shown in the previous EIR as revised.

Concurrent with its final action on the FSSEIR, the City Council will issue findings that comply with the requirements of CEQA Guidelines Sections 15091 and 15163(e), and with Public Resources Code Section 21081.

2.8 MITIGATION MONITORING

Public Resources Code Section 21081.6 requires that the lead agency adopt a mitigation monitoring or reporting program for any project for which it has made findings pursuant to Public Resources Code Section 21081. Such a program is intended to ensure the implementation of all mitigation measures that are adopted following the preparation of an EIR, SEIR, or Negative Declaration.

An updated mitigation monitoring and reporting program will be prepared as part of the FSSEIR and will be completed prior to consideration of the 2012 Modified Project by the Irvine City Council.

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1.1 INTRODUCTION

This Draft Second Supplemental Environmental Impact Report ("DSSEIR") addresses the environmental effects associated with the implementation of the Heritage Fields 2012 – General Plan Amendment and Zone Change Project at the former Marine Corps Air Station ("MCAS"), El Toro (the "2012 Modified Project"). The California Environmental Quality Act ("CEQA") requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. In this case the City of Irvine ("City"), as lead agency, determined that a Supplemental Environmental Impact Report (EIR) should be prepared. An EIR is a public document designed to provide the public and local and State governmental agency decision makers with an analysis of potential environmental consequences to support informed decision-making. This document focuses on those impacts determined to be potentially significant as disclosed in the Initial Study completed for the 2012 Modified Project (see Appendix A to this DSSEIR).

As discussed in Section 3.3.1, *Previous Environmental Documentation*, of this DSSEIR, in 2003, the City certified the Final Program Environmental Impact Report for the Orange County Great Park ("Great Park"), SCH No. 2002101020, dated May 2003 ("2003 OCGP EIR"), which analyzed the environmental effects of the development of 3,625 residential units and 6,585,594 million square feet of non-residential development (including the Great Park and other non-Great Park Neighborhood uses) on a portion of the former Marine Corps Air Station ("MCAS") El Toro. Subsequently, the City prepared, and the City Council of the City of Irvine ("City Council") approved, seven addenda to the 2003 OCGP EIR ("Addenda"), which analyzed revisions made to the project that were analyzed in the 2003 OCGP EIR. In addition, in September 2011 the City Council certified a Supplemental EIR ("2011 SEIR"), which analyzed a total of 4,894 dwelling units and 6,585,594 square feet of non-residential uses (including Great Park uses and other non-Great Park Neighborhood uses). The City Council thereafter approved an eighth Addendum in October 2011. The actions analyzed in the 2003 OCGP EIR, the eight Addenda, and the 2011 Supplemental EIR are referred to in this DSSEIR as the "2011 Approved Project." The 2003 OCGP EIR, the eight Addenda, and the 2011 SEIR are referred to together as the "2011 Certified EIR." The 2011 Certified EIR is incorporated by reference in this DSSEIR. A summary of the 2011 Certified EIR is provided in Section 3.3.1 of this DSSEIR.

This DSSEIR has been prepared pursuant to the requirements of CEQA (California Public Resources Code, Division 13, Sections 21000, et seq.), the State CEQA Guidelines (Title 14 of the California Code of Regulations, Division 6, Chapter 3, Sections 15000, et seq.), and the City's CEQA Procedures. The overall purpose of this DSSEIR is to inform the City's decision makers and the general public whether, as compared to the 2011 Approved Project, the 2012 Modified Project would result in any new significant impacts or an increase in the severity of significant impacts of the 2011 Approved Project. The 2011 Approved Project is the "baseline" for the analysis in this DSSEIR, and was used in preparing the Initial Study for the 2012 Modified Project, to evaluate the potential impacts of the 2012 Modified Project. The City, as the Lead Agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including, without limitation, by relying on applicable City technical personnel and review of all technical subconsultant reports.

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Data and other information for this DSSEIR was obtained from previous environmental documentation; onsite field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data and similar literature; and specialized environmental assessments (e.g., air quality analysis, geology and soils update, greenhouse gas emissions analysis, hydrology and water quality updates, noise analysis, traffic impact analysis and a water supply assessment).

1.2 ENVIRONMENTAL PROCEDURES

This DSSEIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the 2012 Modified Project, as well as associated anticipated future discretionary actions and approvals for the 2012 Modified Project, all as compared to the 2011 Approved Project. The six main objectives of this document as established by CEQA are listed below:

- 1) To disclose to decision makers and the public the significant environmental effects of proposed activities.
- 2) To identify ways to avoid or reduce environmental damage.
- 3) To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
- 4) To disclose to the public reasons for agency approval of projects with significant environmental effects.
- 5) To foster interagency coordination in the review of projects.
- 6) To enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation identified in CEQA and the CEQA Guidelines and provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts.

An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information contained in the EIR; determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines; determine that it reflects the independent judgment of the lead agency; adopt findings concerning the project's significant environmental impacts and alternatives; and adopt a Statement of Overriding Considerations ("SOC") if the proposed project would result in significant impacts that cannot be avoided.

1.2.1 EIR Format

This DSSEIR has been formatted as described below.

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Table of Contents. The table of contents provides a list of the chapters, sections, figures, and tables included in this DSSEIR and the associated page numbers where they can be found. The table of contents also includes a list of defined terms and abbreviations used in this DSSEIR.

Section 1. Executive Summary: Summarizes the background and description of the 2012 Modified Project, the format of this DSSEIR, project alternatives, and the potential environmental impacts and mitigation measures identified for the 2012 Modified Project. It also includes a discussion of any critical issues remaining to be resolved and areas of controversy.

Section 2. Introduction: Describes the purpose of this DSSEIR, background on the 2012 Modified Project, the Notice of Preparation/Initial Study ("NOP/IS"), the use of incorporation by reference, Final EIR certification, and mitigation monitoring requirements.

Section 3. Project Description: Includes a detailed description of the 2012 Modified Project, the objectives of the 2012 Modified Project, the Proposed Project Site location, approvals anticipated to be included as part of the 2012 Modified Project, the necessary environmental clearances for the 2012 Modified Project, and the intended uses of this DSSEIR.

Section 4. Environmental Setting: Includes a description of the physical environmental conditions in the vicinity of the Proposed Project Site as they existed at the time the NOP/IS was published, from both a local and regional perspective. Ordinarily, the existing environmental setting provides the baseline physical conditions from which the lead agency determines the significance of environmental impacts resulting from a development project. However, because this is a Supplemental EIR that supplements the 2011 Certified EIR, the baseline used for the analyses in this DSSEIR is the 2011 Approved Project.

Section 5. Environmental Analysis: For each environmental topic analyzed, the DSSEIR provides a description of the affected environment, presenting an analysis for each of the environmental resource areas evaluated, a detailed analysis of the environmental impacts, and discussion of mitigation measures to reduce or eliminate any significant environmental impacts associated with the 2012 Modified Project. Included for each environmental topic (i.e., Aesthetics, Air Quality, Transportation and Traffic, etc.) addressed in Section 5.0 is the identification and description of specific measures or requirements incorporated into the 2012 Modified Project that serve to avoid or lessen potential significant impacts. Those measures and requirements fall into the following three categories:

- **Existing Plans, Programs, and Policies ("PPPs").** These measures include existing regulatory requirements, plans and programs that are applicable to the 2012 Modified Project and that reduce or avoid impacts. For example, existing standard conditions imposed by the City, such as the requirement that new structures meet seismic safety requirements (i.e., Uniform Building Code requirements), serve to reduce the potential for new development within the Proposed Project Site to be significantly affected by possible seismic events.
- **Project Design Features ("PDFs").** The analysis of each topic includes a description of any project design features proposed by Heritage Fields El Toro, LLC ("Applicant" or "Heritage Fields"), which are specifically intended and designed to reduce or avoid impacts.
- **Mitigation Measures ("MMs").** For those issue areas where the impact analysis determines that implementation of the 2012 Modified Project would result in significant impacts, as compared to

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the 2011 Approved Project, mitigation measures are recommended in accordance with the requirements of CEQA.

It should be noted that the existing PPPs and the PDFs as well as the MMs for the 2011 Approved Project, as adopted in the mitigation monitoring and reporting program (the "MMRP") for the 2011 Approved Project, were assumed to be incorporated into the 2012 Modified Project for each topical issue area analyzed given that they have already been adopted by the City in the 2011 Approved Project or in MMRP for the 2011 Approved Project. Additional MMs were formulated only for those topical issue areas where the results of the impact analysis identified significant impacts of the 2012 Modified Project, as compared to the 2011 Approved Project, even with the inclusion of PPPs, PDFs, and the 2011 Approved Project's MMs. All three types of measures described above will be required to be implemented as part of the 2012 Modified Project, and will be included in the MMRP for the 2012 Modified Project. In instances where these types of measures are not feasible, or cannot reduce the impact to a less than significant level, the impact is identified as "Significant and Unavoidable."

Section 6. Significant Unavoidable Adverse Impacts: Describes the significant unavoidable adverse impacts of the 2012 Modified Project.

Section 7. Alternatives to the Proposed Project: Describes the impacts of the alternatives to the 2012 Modified Project, including the No Project/2011 Approved Project Alternative and the Marine Way Alignment Alternative, and compares the alternatives to the 2012 Modified Project.

Section 8. Impacts Found Not to Be Significant: Briefly describes the potential impacts of the 2012 Modified Project that the City determined in its Initial Study (Appendix A to this DSSEIR) would not be significant and that therefore have not been discussed in detail elsewhere in this DSSEIR.

Section 9. Significant Irreversible Changes Due to the 2012 Modified Project: Describes the significant irreversible environmental changes associated with the 2012 Modified Project.

Section 10. Growth-Inducing Impacts of the 2012 Modified Project: Describes the growth-inducing impacts of the 2012 Modified Project.

Section 11. Organizations and Persons Consulted: Lists the people and organizations that were contacted during the preparation of this DSSEIR for the 2012 Modified Project.

Section 12. Qualifications of Persons Preparing EIR: Lists the people who prepared this DSSEIR for the 2012 Modified Project.

Section 13. Bibliography: A bibliography of the technical reports and other documentation used in the preparation of this DSSEIR for the 2012 Modified Project.

Appendices. The appendices to this DSSEIR (presented in PDF format on a CD attached to the front cover) contain the following supporting documents:

- Appendix A: Notice of Preparation ("NOP") and Initial Study
- Appendix B: NOP Responses
- Appendix C: Air Quality Technical Report
- Appendix D: Greenhouse Gas ("GHG") Technical Report

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- Appendix E: Hydrology Study
- Appendix F: Water Quality Technical Report
- Appendix G: Noise Technical Report
- Appendix H: Public Services Correspondence
- Appendix I: Traffic Impact Analysis
- Appendix J: Sewer and Water Master Plan Study
- Appendix K: 2011 SAMP Update
- Appendix L: 2012 Water Supply Assessment
- Appendix M: Geology and Seismicity Update
- Appendix N: Biological Technical Report for: Irvine Wildlife Corridor Relocation
- Appendix O: Relocated Wildlife Feature - Light and Noise Memo

1.2.2 Type and Purpose of This DSSEIR

According to Section 15121(a) of the CEQA Guidelines, the purpose of an EIR is to:

Inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

This DSSEIR analyzes the changes to the 2011 Approved Project that are being proposed by the 2012 Modified Project. CEQA dictates when a supplemental or subsequent EIR is required for changes being made to a project that was previously analyzed under CEQA. Once a project has been approved based on a CEQA analysis contained in an EIR, or even in a negative declaration, and the EIR or negative declaration is no longer subject to challenge, CEQA section 21166 provides that "no subsequent or supplemental environmental impact report shall be required by the lead agency or any responsible agency" unless one of three circumstances apply: (1) substantial changes to the approved project will require major revisions to the certified EIR, (2) substantial changes occur with respect to the circumstances under which the approved project is being undertaken will require major revisions to the certified EIR, or (3) new information, that was not known and could not have been known at the time the EIR for the approved project was certified becomes available. (CEQA § 21166.)

In this case, in-depth review has already occurred and the time for challenging the sufficiency of the 2011 Certified EIR has long since expired (CEQA § 21167, subd. (c)). Moreover, as discussed below, no circumstances have changed enough to justify repeating a substantial portion of the process. The factors used to evaluate whether a subsequent or a supplemental EIR should be prepared are set forth in CEQA Guidelines 15162 and 15163, and relate to whether "major changes" to the EIR are required. CEQA Guidelines section 15162 clarifies what constitute major changes to the EIR. According to that Section, major changes to the EIR are those that are required either:

- "Due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;" (CEQA Guidelines § 15162, subd. (a)(1), (a)(2); see also, id., subd. (a)(3)(A), (a)(3)(B));
- Where "[m]itigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or" (id., subd. (a)(3)(C));

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- Where "[m]itigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative." (Id., subd. (a)(3)(D).)

This Draft SSEIR does not disclose any new significant environmental effects or any substantial increase in the severity of previously identified significant effect except for certain increases in Air Quality and Traffic impacts. Although the 2012 Modified Project's impacts in these two areas are increased, as compared to the 2011 Approved Project, these are both areas in which impacts for the 2011 Approved Project were already previously identified as significant and unavoidable in the 2011 Certified EIR. Like the 2011 Approved Project, the 2012 Modified Project would result in significant and unavoidable impacts to Transportation/Traffic, but only if certain mitigation measures requiring improvements that are within the responsibility and jurisdiction of a public agency over which the City has no control, are not implemented for reasons beyond the City's control. Moreover, the Applicant has not refused to adopt any new or newly feasible mitigation measures or alternatives. However, it should be noted that the 2011 Certified EIR concluded that population and housing impacts would be a significant and unavoidable adverse impact of the 2011 Approved Project. As described in Section 5.9, *Population and Housing*, of this DSSEIR, impacts related to population and housing are no longer considered significant with implementation of the 2012 Modified Project.

This DSSEIR is a project-level document that supplements the analyses in the 2011 Certified EIR. Section 15163 of the CEQA Guidelines provides that:

- (a) The lead or responsible agency may choose to prepare a supplement to an EIR rather than a subsequent EIR if:
 - 1) Any of the conditions described in Section 15162 would require the preparation of a subsequent EIR, and
 - 2) Only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.
- (b) The supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project as revised.
- (c) A supplement to an EIR shall be given the same kind of notice and public review as is given to a draft EIR under Section 15087.
- (d) A supplement to an EIR may be circulated by itself without recirculating the previous draft or final EIR.
- (e) When the agency decides whether to approve the project, the decision-making body shall consider the previous EIR as revised by the supplemental EIR. A finding under Section 15091 shall be made for each significant effect shown in the previous EIR as revised.

In accordance with Section 15163 of the CEQA Guidelines, this document:

- Incorporates the 2011 Certified EIR by reference, as discussed in Section 3.3.1, *Previous Environmental Documentation*.

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- Contains information necessary to make the 2011 Certified EIR adequate for the 2012 Modified Project.
- Evaluates the potential environmental impacts of the changes to the 2011 Approved Project that are proposed by the 2012 Modified Project.
- Focuses on the land uses of the 2012 Modified Project and analyzes the potentially significant impacts of these proposed land uses, as compared to the 2011 Approved Project.
- Updates where necessary information relating to the resources in the vicinity of the Proposed Project Site that will be affected by the 2012 Modified Project.
- Updates where necessary the discussion of cumulative impacts, project alternatives, growth inducing impacts and other required sections of this DSSEIR.

The 2012 Modified Project changes to the 2011 Approved Project are summarized below in Section 1.4, *Project Description*, and more fully described in Chapter 3 of this DSSEIR. The analysis contained in this DSSEIR confirms that the 2011 Certified EIR is adequate for the 2012 Modified Project, with the updated information contained herein.

1.3 PROJECT LOCATION

As used in this DSSEIR, the term "Proposed Project Site" refers to and encompasses; 1) the Heritage Fields Development, also known as the Great Park Neighborhoods, consisting of nine existing Development Districts; 2) an approximately 11 acre parcel currently owned by the Transportation Corridor Agencies (TCA) located adjacent to the SR-133 Freeway between Trabuco Road and Irvine Boulevard (the "TCA Property"); 3) Lot D, Lot E, and Lot F as depicted on 2nd Amended Vesting Tentative Tract Map 17008 currently zoned 3.2 Transit Oriented Development within Districts 2 and 3 (together, the "City Parcels"); 4) approximately 132 acres owned by the City and zoned 1.4 Preservation that generally extends from Irvine Boulevard to the Southern California Regional Rail Authority ("SCRRA") rail lines, as depicted in Figure 3-5 and that is part of the "Approved Wildlife Corridor Feature"; and 5) a portion of the Great Park known as the "Sports Park District," all of which are located within the areas designated as Existing "Planning Area" (PA) 30 and Existing PA 51 in the City's General Plan, northeast of the freeway junction of Interstate 5 (I-5) and Interstate 405 (I-405), within the City. Figure 3-1, *Regional Location*, depicts the location of the Proposed Project Site in a regional context and Figure 3-2, *Local Vicinity*, shows its local context. Figure 3-2 also shows the Development Districts, the TCA Parcel and the additional acreage owned by the City, which are the subject of this DSSEIR.

Existing PA 51 is generally bounded by the Eastern Transportation Corridor to the west, the Foothill Transportation Corridor to the north, the SCRRA rail lines to the south, and Irvine Boulevard and the storm water channel near Alton Parkway to the north. Existing PA 51 abuts Existing PA 30 and PA 32 to the south, PA 35 (Irvine Spectrum 2) and the City of Lake Forest to the east, and PAs 9 and 40 to the west. Existing PA 30 is generally bounded by I-5 to the south, the SCRRA rail lines to the north, and the Irvine Spectrum to the east and west (Irvine Spectrum 2- PA 35 and Irvine Spectrum 3 - PA 32).

The major roadways bordering the 2012 Modified Project are Sand Canyon Avenue to the west, Portola Parkway to the north, and Alton Parkway to the east. Irvine Boulevard separates District 7 and District 8 on its north side from District 1-North, District 1-South and District 4 on its south side. The Irvine Station

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is adjacent to the SCRRA rail lines that traverse the Proposed Project Site and that separate Existing PAs 30 and 51. Surrounding the Proposed Project Site are residential and nonresidential uses to the north and west, open space to the northeast, and nonresidential and mixed land uses to the east and southeast within the City of Lake Forest and Irvine. An aerial photograph of the Proposed Project Site is shown in Figure 3-3, *Aerial Photograph*.

1.4 PROJECT SUMMARY

The 2012 Modified Project changes the 2011 Approved Project as follows:

- Combines Existing PAs 30 and 51, and the TCA Parcel, into a single PA that will be designated “Combined PA 51”;
- Rezones property in Districts 2, 3, and 6 from 3.2 Transit Oriented Development, 4.3 Vehicle Related Commercial, and 5.4B General Industrial to 8.1/8.1B Trails and Transit Oriented Development.
- Relocates a 132-acre portion of the Approved Wildlife Corridor Feature known as Segments 2 and 3 (the “Relocated Wildlife Corridor Feature”), to a location adjacent to the Borrego Canyon Channel within District 5 and 6.
- Rezones 13-acres in District 6 (formerly District 9) from its current 1.1 Agriculture zoning to 1.4 Preservation to accommodate the Relocated Wildlife Corridor Feature.
- Rezones the City Parcels from 3.2 Transit Oriented Development to 8.1 Trails and Transit Oriented Development.
- Updates the General Plan land use designation and zoning designation for the TCA Parcel to Orange County Great Park and 8.1 TTOD, respectively.
- Amends the Master Plan of Arterial Highways, Figure B-1, to eliminate the extension of Rockfield Boulevard from the eastern boundary of the Proposed Project Site to Marine Way once the Orange County Transportation Authority (OCTA) has approved this proposed amendment to the countywide Master Plan of Arterial Highways (see Figure 3-4, *Proposed MPAH Amendment*).
- Modifies General Plan Objective B-1 to identify where LOS E may be considered potentially acceptable, as shown on Figure 3-6, *Proposed Locations Where LOS E May Be Acceptable*, of this DSSEIR.
- Amends the City General Plan and Zoning Ordinance to allow the following:
 - 3,412 residential units within Combined PA 51, in addition to the 4,894 units already approved by the City and located in Districts 1 North, 1 South, 4, 7, and 8.
 - Modify non-residential uses within Combined PA 51 to allow:
 - 3,364,000 square feet of Medical and Science

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- 1,318,200 square feet of Multi-Use. The 2012 Modified Project includes an option to convert up to 535,000 square feet of the proposed Multi-Use intensity to residential intensity for up to an additional 889 dwelling units within District 6 and Lot 48 of 2nd Amended VTTM 17008, subject to a vehicle trip limit.
- 220,000 square feet of Community Commercial
- Grants, pursuant to State law, up to 1,194 additional DB units (35% of the proposed additional 3,412 multi-use residential units) plus up to 311 additional DB units associated with the optional conversion of up to 535,000 square feet of non-residential Multi-Use intensity to residential intensity and granted pursuant to State law.
- Encourages Accessory Retail, as defined in the City of Irvine Zoning Code, within Combined PA 51.

The 2012 Modified Project consists of 4,606 dwelling units (3,412 base units and 1,194 DB units) for a total of 9,500 units.). The 2012 Modified Project also includes the option to convert up to 535,000 square feet of non-residential Multi-Use to up to 889 base dwelling units and 311 DB units, granted pursuant to State law. These are in addition to the already approved 4,894 dwelling units. With the conversion, the total number of dwelling would be 10,700 units.

In addition, the 2012 Modified Project proposes to relocate certain portions of the Approved Wildlife Corridor Feature. The Approved Wildlife Corridor Feature is a design feature included in the OCGP Master Plan that connects established habitat preserve areas in the central and coastal subareas of the Orange County Central Coastal NCCP/HCP, and is intended to provide habitat for, and facilitate movement of four target species: Bobcat (*Lynx rufus*), Coyote (*Canis latrans*), Coastal California Gnatcatcher (*Poliophtila californica californica*), and Least Bell's Vireo (*Vireo bellii pusillus*). The Approved Wildlife Corridor is comprised of five "segments."

The 2012 Modified Project proposes to relocate Segments 2 and 3 of the Approved Wildlife Corridor Feature, which total 132 acres, to a location adjacent to Borrego Canyon Channel within Districts 5 and 6, as shown on Figure 3-5, *Proposed Wildlife Corridor Relocation*, of this DSSEIR. The relocated segments of the Approved Wildlife Corridor Feature total 132 acres and the 2012 Modified Project proposes to zone these segments in their new location as 1.4 Preservation. Concurrently, the 2012 Modified Project proposes to incorporate the area currently approved for Segments 2 and 3 of the Approved Wildlife Corridor Feature into Districts 5 and 6, and to rezone the area 8.1 TTOD.

The Relocated Wildlife Corridor Feature would provide habitat for, and facilitate movement of, the same four target species as the Approved Wildlife Corridor Feature, and would range in width from approximately 500 to 1,000 feet, with an average width of more than 600 feet. Road and/or trail crossings may cross the Relocated Wildlife Corridor Feature, but would be designed with sufficient clearance to allow for free passage of the target species while discouraging wildlife from crossing at grade. Storm water flows from development of areas adjacent to the western side of the Relocated Wildlife Corridor Feature may be discharged into the Relocated Wildlife Corridor Feature so long as they are first treated pursuant to applicable water quality regulatory requirements and can be introduced without requiring artificial channel stabilization. The Relocated Wildlife Corridor Feature would be planted with native vegetation, which may include mulefat scrub, southern willow scrub, coastal sage scrub, cactus scrub, needlegrass grasslands and screening plantings. Earthen berms and screening vegetation would be

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installed along the eastern and western edges of the Relocated Wildlife Corridor Feature as necessary to provide screening, to reduce visibility and human access into the corridor, and to reduce light spillage and ambient noise within the corridor.

The 2012 Modified Project includes two options for the “Main Street” development along Trabuco Road east of “O” Street. Option 1, which was studied in the 2011 SEIR, includes Community Commercial and Multi-Use north of Trabuco Road with Residential south of Trabuco Road in District 1 South. Option 2, which is studied in this DSSEIR, would include Residential north of Trabuco Road with Community Commercial, Multi-Use, and Residential south of Trabuco Road in District 1 South. Option 1 was analyzed in the 2011 SEIR within the context of the other entitlements that were part of the 2011 SEIR Approved Project. This DSSEIR studies Option 1 in the context of the changes proposed as part of the 2012 Modified Project. Both Options include a 2,600 student high school in District 5.

The 2012 Modified Project also includes implementation of recreational facilities in the previously approved Sports Park District of the Orange County Great Park (Great Park).

The 2012 Modified Project incorporates the Mitigation Measures recommended by the 2011 Certified EIR and adopted by the City in the Mitigation Monitoring and Reporting Program for the 2011 Approved Project. It also includes the Project Design Features described below.

General Plan Amendments

The General Plan Amendment application requests the following in Existing PAs 30 and 51: (1) consolidation of Existing PAs 30 and 51 and the TCA Parcel into one PA to be designated as “Combined PA 51”; (2) amendment of the General Plan maps to reflect a zone change for Districts 2, 3 and 6 from 3.2 Transit Oriented Development, 4.3 Vehicle Related Commercial, and 5.4 B General Industrial to 8.1 TTOD; (3) amendment of the General Plan maps to reflect a zone change for a portion of District 5, which is currently zoned 8.1 TTOD, and 13-acres in District 6 (formerly District 9), which is currently zoned 1.1 Agriculture, to 1.4 Preservation to accommodate the Relocated Wildlife Corridor Feature; (4) amendment of General Plan Land Use Table A-1 to allow 9,500 dwelling units in the proposed Combined PA 51 (reflecting the inclusion of the previously approved 4,894 residential units) with an option to convert up to 535,000 square feet of non-residential Multi-Use to up to an additional 889 dwelling units (and 311 DB units) for a revised total up to 10,700 dwelling units; and (5) amendment the Master Plan of Arterial Highways, Figure B-1, to eliminate the extension of Rockfield Boulevard from the eastern project boundary to Marine Way once the proposed amendment to the countywide Master Plan of Arterial Highways (MPAH) is approved by the OCTA.

The proposed text and table modification for the General Plan generally consist of the following:

- Revise General Plan Land Use Table A-1 and associated footnotes to modify the distribution of residential units;
- Revise General Plan Land Use Tables A-1 and A-2 to combine Existing PAs 30 and 51 into one PA, Combined PA 51;
- Delete references to Existing PA 30 throughout the General Plan;

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- Revise General Plan Table A-1 and associated footnotes to allow a total of 9,500 dwelling units in Combined PA 51 with an option to convert up to 535,000 square feet of non-residential Multi-Use to up to an additional 889 dwelling units (and 311 DB units) for a revised total of up to 10,700 dwelling units in Combined PA 51;
- Amend General Plan maps and figures to reflect the proposed zone changes identified below;
- Revisions to General Plan Land Use Table A-2 and associated footnotes to modify the land use acreage distribution;
- Amend General Plan Circulation Element, Figure B-1, and other General Plan Maps as necessary, to eliminate the extension of Rockfield Boulevard from the eastern project boundary to Marine Way once the Orange County Transportation Authority (OCTA) has approved this proposed amendment to the countywide Master Plan of Arterial Highways;
- Modify General Plan Objective B-1 to identify locations where LOS E may be considered potentially acceptable, as shown on Figure 3-6, *Proposed Locations Where LOS E May Be Acceptable*, of this DSSEIR;
- Amend General Plan Figure G-1 to add the location of a 2,600 student high school within District 5;
- Revise Figure A-2 and Figure C-2 to reflect the deletion of Existing Planning Area 30;
- Revise Figure L-2 to depict the Relocated Wildlife Corridor Feature; and
- Other minor modifications as necessary to implement the 2012 Modified Project.

Zoning Ordinance Amendments

Consistent with the goal of unified land use and development regulations, the 2012 Modified Project proposes to rezone property located in Districts 2, 3, and 6 (currently zoned 3.2 Transit Oriented Development, 4.3 Vehicle Related Commercial, and 5.4B General Industrial), the City Parcels, and the TCA Parcel, to 8.1 Trails and Transit Oriented Development. In addition, 13-acres in District 6 (formerly District 9) that are currently zoned 1.1 Agriculture will be rezoned to 1.4 Preservation to accommodate the Relocated Wildlife Corridor Feature. The existing zoning is shown on Figure 3-7, *Existing Zoning*, of this DSSEIR, and proposed zone changes are shown on Figure 3-8, *Proposed Zone Changes*. Proposed zoning is shown on Figure 3-9, *Proposed Zoning*.

The 2012 Modified Project generally proposes the following Zoning Ordinance text amendments:

- Integrate certain conditional uses (manufacturing (light), mini warehouse, recreational vehicle storage (public), vehicle assembly, vehicle body, repair, paint or restoration, and vehicle sales) and permissive uses (vehicle repair and detailing, mobile and warehousing, storage and distribution) found in the 3.2 Transit Oriented Development, 4.3 Vehicle Related Commercial, and 5.4B General Industrial zones into the 8.1 Trails and Transit Oriented Development zone, as appropriate;

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- Modify the 8.1/8.1B Trails and Transit Oriented Development maximum site coverage standards (Section 3-37-39(G)) to permit unlimited site coverage outside setback areas within ½ mile of a train station or transportation center;
- Modify the 8.1/8.1B Trails and Transit Oriented Development maximum site building height standards (Section 3-37-39(H)) to allow unlimited building height within ½ mile of a train station or transportation center and building heights of 90 feet for hotel/hospitality uses;
- Modify Section 3-37-39 to change residential shelter from a conditional use to a permitted use in the 8.1 Trails and Transit Oriented District zoning district;
- Delete Chapter 9-30 due to the elimination of Existing PA 30 (which will merge with Existing PA 51 into one cohesive planning area, Combined Planning Area 51);
- Modify Chapter 9-51 to reflect the consolidation of Existing PAs 30 and 51, including, but not limited to:
 - Modify Section 9-51-3, the Statistical Analysis and Map to reflect the changes in land use and acreage intensities
 - Modify the maximum average daily traffic (ADT) in Combined PA 51 to reflect the sum of the maximum ADT currently permitted in Existing PAs 30 and 51.
- Modify Chapter 9-51 to permit an additional 3,412 dwelling units and an additional 1,194 DB units in Combined PA 51, with an option to convert up to 535,000 square feet of non-residential Multi-Use to up to 889 base dwelling units and 311 DB units, granted pursuant to State law,;
- Modify Chapter 9-51 to allow the following revised non-residential intensities in Combined PA 51:
 - 3,364,000 square feet of Medical and Science
 - 1,318,200 square feet of Multi-Use. The 2012 Modified Project includes an option to convert up to 535,000 square feet of the proposed non-residential Multi-Use intensity to residential intensity for up to an additional 889 base dwelling units and 311 DB units within District 6 and Lot 48 of 2nd Amended VTTM 17008, subject to a vehicle trip limit.
 - 220,000 square feet of Community Commercial
- Add Section 9-51-6 (Q) regarding district character that discusses anticipated density, intensity, mix of land uses, and vehicular, bicycle, and pedestrian networks;
- Add Section 9-51-6 (S) regarding optional conversion (see description above);
- Add Section 9-51-6 (U) regarding information that will be provided to the City regarding land sales;

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- Modify Section 9-51-6 (D) regarding development monitoring and tracking;
- Add Section 9-51-6(T) regarding the circumstances under which additional traffic analysis may be required; and
- Other modifications as necessary to implement the 2012 Modified Project.

Project Design Features

The following project design features (PDFs) have been incorporated into the 2012 Modified Project and have been assumed in the analyses of the 2012 Modified Project that are contained in Chapter 5, *Environmental Analysis*, where appropriate. With the exception of PDFs 8-1, 10-1, 10-2, and 11-1, these PDFs were included in the 2011 Certified EIR for the 2011 Approved Project, however, they have been renumbered. PDFs 4-3 and 4-8 have been revised to reflect the subsequent adoption of the California Green Building Standards Code and the Energy Commission's 2013 Building Energy Efficiency Standards (Title 24). PDFs 8-1, 10-1, 10-2, and 11-1 are new PDFs associated with the 2012 Modified Project that were not previously incorporated into the 2011 Approved Project.

- PDF 4-1 **Compact/Mixed-Use Development:** The California Energy Commission (CEC) considers compact development forms beneficial for minimizing energy consumption that leads to greenhouse gas emissions. In fact, the CEC's report on the connections between land use and climate change identifies density as the project feature most predictive of the number of vehicle trips and vehicle miles traveled ("VMT") by project occupants. Like the 2011 Approved Project, the 2012 Modified Project increases the density of development on the Proposed Project Site. Doing so will tend to reduce VMT on a local and regional basis. For the purpose of the analysis in this DSSEIR, it was assumed that there would be only a 25% reduction in VMT, which is within the range observed in Southern California.
- PDF 4-2 **High Rate of Internal Trip Capture:** With the inclusion of a mix of land uses including office, commercial, industrial, and residential in the Proposed Project Site, the 2012 Modified Project reduces trips outside the Proposed Project Site. This reduces trip length and congestion on the local circulation system outside the Proposed Project Site.
- PDF 4-3 **Low-Flow Fixtures:** The 2012 Modified Project incorporates low-flow water fixtures that will meet the requirements of the California Green Building Standards Code. Prior to issuance of building permit, the Applicant or its successor shall submit evidence to the satisfaction of the Director of Community Development that toilets, urinals, sinks, showers, and other water fixtures installed on-site meet the California Green Building Standards Code.
- PDF 4-4 **Landscaping and Irrigation Systems:** The 2012 Modified Project incorporates automated, high-efficiency landscaping irrigation systems on all master landscaped areas that reduce water use, such as evapotranspiration "smart" weather-based irrigation controllers, and bubbler irrigation; low-angle, low-flow spray heads; moisture sensors; and use of a California-friendly landscape palette. Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the City's Director of Community Development that such landscaping irrigation systems will be installed so as to make the 2012 Modified Project consistent with the intent of the California Water Conservation in

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Landscaping Act of 2006 (“AB 1881”), including provisions to reduce the wasteful, uneconomic, inefficient, and unnecessary consumption of water.

- PDF 4-5 **Use of Reclaimed Water on All Master Landscaped Areas:** Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the City’s Director of Community Development and the Irvine Ranch Water District (“IRWD”) that the landscape plans incorporate the use of reclaimed water in all master landscaped areas, including master landscaped commercial, multifamily, common, roadways, and park areas. Master landscapes shall also incorporate weather-based controllers and efficient irrigation system designs to reduce overwatering, combined with the application of a California-friendly landscape palette.
- PDF 4-6 **Material Recovery:** The 2012 Modified Project incorporates measures to reduce waste generated by Proposed Project Site residents, occupants and visitors, and to encourage recycling of solid wastes, utilizing the Orange County Integrated Waste Management Department’s material recovery facilities to recycle glass, plastic, cans, junk mail, paper, cardboard, greenwaste (e.g., grass, weeds, leaves, branches, yard trimmings, and scrap wood), and scrap metal. Future employees, residents, and customers would participate in these programs. These measures include the requirement to include on-site recycling facilities at all commercial, retail, industrial, and multi-family residential developments. In addition, educational materials identifying available recycling programs shall be distributed to all land uses, including single-family residential.
- PDF 4-7 **Energy Star Appliances:** EnergyStar appliances (excluding refrigerators), such as dishwashers, clothes washers, clothes dryers, air conditions, furnaces, and water heaters, shall be offered or installed in all residential dwelling units.
- PDF 4-8 **Building Energy Efficiency:** Residential dwellings and non-residential buildings will be constructed so that they achieve 15 percent higher energy efficiency than the applicable standards set forth in the 2008 California Building and Energy Efficiency Standards (Title 24, Part 6 of the California Building Code) or meet the standards in effect at the time of issuance of building permit. The Energy Commission’s 2013 Building Energy Efficiency Standards are 25 percent more efficient than the 2008 standards for residential construction and 30 percent more efficient for nonresidential construction. The 2013 Energy Efficiency Standards, which take effect on January 1, 2014, offer builders more efficient windows, insulation, lighting, ventilation systems and other options that would reduce energy consumption in homes and businesses.
- PDF 4-9 **Carbon Sequestration:** The 2012 Modified Project incorporates landscaping and a plant palette that will foster carbon sequestration within the Proposed Project Site that is comparable to the landscaping and plant palette that was already incorporated into the 2011 Approved Project.
- PDF 4-10 **Softscape Landscaped Areas:** Consistent with sustainable practices and modern landscaping standards and consistent with the landscaping used in the 2011 Approved Project, the 2012 Modified Project reduces softscape (e.g., plants/horticultural elements of landscape design) landscaped areas by 28 percent as compared to the default assumption in CalEEMod.

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PDF 8-1 **Construction Noise:** Prior to issuance of grading permits, the project applicant or its successor shall incorporate the following measures as a note on the grading plan cover sheet to ensure that the greatest distance between noise sources and sensitive receptors during construction activities has been achieved, and that construction noise has been reduced.

- During construction activities, all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, consistent with manufacturers' standards. All stationary construction equipment shall be placed so that emitted noise is directed away from the noise-sensitive receptors nearest the Proposed Project Site boundaries.
- Equipment shall be staged in areas that will create the greatest distance between construction-related noise sources and the noise-sensitive receptors nearest the Proposed Project Site during all project construction.
- All construction-related activities shall be restricted to the construction hours outlined in the City's Noise Ordinance (Municipal Code Section 6-8-205).
- Haul truck and other construction-related trucks traveling to and from the Proposed Project Site shall be restricted to the same hours specified for the operation of construction equipment. To the extent feasible, haul routes shall not pass directly by sensitive land uses or residential dwellings.
- Where construction will occur adjacent to any developed/occupied noise-sensitive uses, a construction-related noise mitigation plan shall be submitted the Director of Community Development for review and approval prior to the issuance of grading permits. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the 2012 Modified Project, through the use of such methods as: (1) temporary noise attenuation fences; (2) preferential location of equipment; and (3) use of current technology and noise-suppression equipment.
- Construction of planned sound walls that have been incorporated into the project design shall be installed prior to construction of the building foundation; or temporary sound blankets (fences typically composed of poly-vinyl-chloride-coated outer shells with absorbent inner insulation) shall be placed along the boundary of the Proposed Project Site facing the nearest noise-sensitive receptors during construction activities.

PDF 10-1 The Relocated Wildlife Corridor Feature will be designed and planted in such a manner as to ensure that the planting plan does not create a fire hazard for adjacent development. Maintenance of vegetation within the Relocated Wildlife Corridor Feature is not anticipated, but would be allowed as needed for fire control. Final approval of the planting schemes and palettes will require approval from the Orange County Fire Authority.

PDF 10-2 Appropriate edge effect characteristics (e.g. earthen berms, vegetative or other barriers) will be implemented as necessary along the edges of the Relocated Wildlife Corridor Feature in order to reduce visibility and human access into the corridor, and to reduce light spillage and ambient noise within the corridor.

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PDF 12-1 The 2012 Modified Project's optional conversion of non-residential square footage to residential units, if implemented, will be subject to a traffic analysis to assess traffic impacts, if any, due to the change in land use and will include a reduction in allowable Multi-Use intensity in terms of equivalent traffic generation (excluding DB units) based on AM peak, PM peak, and ADT. Conversions to other non-residential uses within the Multi-Use category, if implemented, will also be subject to a traffic analysis to assess traffic impacts, if any, and shall be reflected in terms of equivalent traffic generation based on AM peak, PM peak, and ADT.

1.5 SUMMARY OF PROJECT ALTERNATIVES

The CEQA Guidelines (Section 15126[a]) state that an EIR must address "a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives."

As described in Chapter 7, *Alternatives*, of this DSSEIR, the following two project alternatives were identified and analyzed, and their impacts were compared to the impacts of the 2012 Modified Project:

- No Project/2011 Approved Project Alternative
- Marine Way Realignment Alternative

Selection of the alternatives was based, in part, on their potential ability to reduce or eliminate at least one significant impact of the 2012 Modified Project including the following impacts determined to be significant and unavoidable:

- Air Quality
- Transportation and Traffic

Please refer to Chapter 7 for a complete discussion of how the alternatives were selected and the relative impacts associated with each alternative. The following presents a summary of each of the alternatives analyzed in the DSSEIR. Project objectives are outlined in Chapter 3, *Project Description*, of this DSSEIR.

1.5.1 No Project/2011 Approved Project Alternative

This No Project/2011 Approved Project Alternative is the circumstance under which the 2012 Modified Project would not proceed on the Proposed Project Site, and the 2011 Approved Project would be built in its place on the Approved Project Site. At the time the Notice of Preparation was published for the 2012 Modified Project, the Approved Project Site was vested for development of the 2011 Approved Project, including 4,894 dwelling units and approximately 5.3 million square feet of non-residential development within the Heritage Fields Development Districts.

Under this No Project/2011 Approved Project Alternative, the 4,894 dwelling units would be located in their existing locations under the 2011 Approved Project on the five Vesting Tentative Tract Maps approved for Districts 1 North, 1 South, 4, 7 and 8, respectively, and 5.3 million square feet of non-residential development would be located within the Heritage Fields Development Districts as entitled under the 2011 Approved Project. This alternative would also include implementation of the Master Plans

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and Park Plans for Districts 1 North, 1 South, 4, 7 and 8, implementation of the 2nd Amended VTTM 17008, and implementation of the Amendments to Master Landscape and Trails Plan. Additionally, under the No Project/2011 Approved Project Alternative, the boundaries of Existing PAs 30 and 51 would remain as is; the TCA Parcel would remain within the boundaries of PA 9 and would not be rezoned to 8.1 Trails and Transit Oriented Development; no rezoning of Districts 2, 3, 6 and the City Parcels to 8.1 Trails and Transit Oriented Development would occur; the Option 2 Main Street development along Trabuco Road would not occur; the right to convert non-residential development to residential units would not occur; the Relocated Wildlife Corridor Feature would not occur; and the amendment of Figure B-1 to the Master Plan of Arterial Highways would not occur. In addition, this No Project/2011 Approved Project Alternative would not advance funding for the implementation of recreational facilities for the Great Park.

Ability to Reduce Environmental Impacts

This No Project/2011 Approved Project Alternative would have reduced traffic impacts than the 2012 Modified Project. However, as with the 2012 Modified Project, traffic related impacts would still be considered significant and unavoidable because implementation of certain improvement mitigation measures would be under the control of other cities, Orange County, or Caltrans. In addition, the mass criteria pollutant emissions for the No Project/2011 Approved Project Alternative are lower than for the 2012 Modified Project, although the mass criteria pollutant emissions of both are significant and unavoidable. Further, this No Project/2011 Approved Project Alternative would have a significant population and housing impact, whereas the 2012 Modified Project would not. Therefore, this alternative would not represent a significant improvement as compared to the 2012 Modified Project and, in fact, would have one significant impact that the 2012 Modified Project would not have (population and housing).

1.5.2 Marine Way Realignment Alternative

This alternative has been developed to provide an alternate alignment for Marine Way from East of "B" to Bake Parkway in an effort to reduce potential traffic impacts associated with the 2012 Modified Project. All other components of the 2012 Modified Project would remain the same under this alternative. East of "B" Street, this alternative would shift the alignment of Marine Way easterly to create larger parcels in close proximity to the Irvine Station. The adjusted Marine Way alignment would extend south from "B" Street and cross the SCRRA right of way to connect with Barranca Parkway and Alton Parkway with a more direct bearing toward Bake Parkway.

Ability to Reduce Impacts

Overall, trip generation would remain the same for this alternative as for the 2012 Modified Project, but larger parcels in close proximity to the Irvine Station and a more direct Marine Way alignment toward Bake Parkway would offer some traffic benefit under this alternative since a more direct alignment would allow for faster travel. However, this slight traffic benefit must be weighed against other potential traffic issues that arise with this alternative, namely the decreased distances between arterial intersections on Barranca Parkway and Alton Parkway. Traffic impacts of this alternative would be significant and unavoidable, as would those of the 2012 Modified Project, but only if the off-site improvements under other jurisdictions are not implemented. As further described in Chapter 7, *Alternatives*, all other impacts of this alternative would be similar to those of the 2012 Modified Project.

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1.5.3 Environmentally Superior Alternative

CEQA requires a lead agency to identify the “environmentally superior alternative” when significant environmental impacts result from the 2012 Modified Project, if one exists. In cases where the “No Project” Alternative is environmentally superior to the 2012 Modified Project, an environmentally superior development alternative should be identified as well.

As discuss in Chapter 7, *Alternatives to the 2012 Modified Project*, the alternatives analysis in this DSSEIR differs from a typical alternatives analysis contemplated in CEQA in that the 2011 Approved Project is the subject of a development agreement and has vested development rights. The CEQA Guidelines (Section 15126[a]) state that an EIR must address “a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. As noted the only significant and unavoidable impact of the 2012 Modified Project (aside from the traffic contingency for implementation in other jurisdictions, which cannot remedied) is Air Quality, which primarily results from traffic. Any elimination or reduction of traffic impacts which involves reducing development below the levels approved for the 2011 Approved Project is not legally feasible because that level of development is a vested right that cannot legally be reduced.

This DSSEIR has analyzed an alternative (the Marine Way Realignment Alternative) that could potentially have fewer traffic impacts than the 2012 Modified Project. After analyzing the Marine Way Realignment Alternative, however, the 2012 Modified Project remains the environmentally preferable choice as compared to the No Project/2011 Approved Project and the Marine Way Realignment Alternatives. As discussed above, while the Marine Way Realignment Alternative may have slight traffic benefits, it would require deviation from the City's standards for the minimized distances between signalized intersections

1.6 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the 2012 Modified Project, the major issues to be resolved include decisions by the City, as lead agency, related to the following:

1. Whether this DSSEIR adequately analyzes the environmental impacts of the 2012 Modified Project, as compared to the 2011 Approved Project.
2. Whether the benefits of the 2012 Modified Project override its environmental impacts which cannot be feasibly avoided or mitigated to a level of insignificance.
3. Whether the land use changes proposed by the 2012 Modified Project are compatible with the character of the existing area.
4. Whether the identified project design features and mitigation measures should be adopted and/or modified.

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5. Whether there are other mitigation measures that should be adopted for the 2012 Modified Project in addition to the mitigation measures recommended in the DSSEIR.
6. Whether there are any alternatives to the 2012 Modified Project that would reduce or avoid any of its significant impacts and achieve most of its basic project objectives.

1.7 AREAS OF CONTROVERSY

In accordance with Section 15123(b)(2) of the CEQA Guidelines, the DSSEIR must identify areas of controversy known to the lead agency, including issues raised by agencies and the public. No areas of controversy concerning the 2012 Modified Project have been identified. This DSSEIR has taken into consideration the comments received from the various agencies and jurisdictions in response to the NOP. Written comments received during the NOP period, which extended from April 4 to May 4, 2012, are contained in Appendix B of this DSSEIR. A summary of the NOP comments is provided in Section 2.2, *Notice of Preparation and Initial Study*, of this DSSEIR.

Prior to preparation of this DSSEIR, a public scoping meeting was held on April 19, 2012, at Irvine City Hall. The scoping meeting was held to determine the concerns of responsible and trustee agencies, stakeholders, and the community regarding the 2012 Modified Project. The scoping meeting was attended by various stakeholders, government officials, and one representative from the Irvine Unified School District (IUSD). The only issue raised at the public scoping meeting was related to the provision of IUSD school facilities within the Proposed Project Site. School facilities are addressed in Section 5.11, *Public Services*, of this DSSEIR.

1.8 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-1 summarizes the conclusions of the environmental analyses contained in this DSSEIR. Table 1-1 includes a summary of the environmental impacts of the 2012 Modified Project; mitigation measures, project design features, and existing plans, programs, and policies that reduce potential significant impacts of the 2012 Modified Project; and the level of significance of each significant impact after implementation of PDFs, PPPs, mitigation measures contained in the MMRP for the 2011 Approved Project, and any additional mitigation necessary for the 2012 Modified Project.

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*Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation*

<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
5.1 AESTHETICS			
5.1-1 Development pursuant to the 2012 Modified Project would change, but not substantially degrade, the visual character of the Proposed Project Site compared to land uses proposed under the 2011 Approved Project.	<p>Plans, Programs, and Policies There are no PPPs that apply.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant
5.1-2 Development pursuant to the 2012 Modified Project may decrease sources of light and glare compared to land uses proposed in the 2011 Approved Project.	<p>Plans, Programs, and Policies PPP 1-1 Prior to the issuance of building permits, the applicant shall demonstrate they have met the Irvine Uniform Security Code requirements for lighting by providing the below listed items for a complete review by the Police Department. Failure to provide a complete lighting package will result in the delay of satisfaction of this condition (City Standard Condition 3.6).</p> <ul style="list-style-type: none"> a. Electrical plan showing light fixture locations, type of light fixture, height of light fixture, and point-by-point photometric lighting analysis overlaid on the landscape plan with a tree legend. The photometric plan should only show those fixtures used to meet the Irvine Uniform Security Code requirements. b. Corresponding fixture cut-sheets (specifications) of those lights used to meet the Irvine Uniform Security Code. c. Site plan demonstrating that landscaping shall not be planted so as to obscure required light levels. d. Site plans that are full-scale and legible. <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p>	Less than significant	Less than significant

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*Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation*

<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
	Applicable Mitigation Measures from the 2011 Certified EIR		
	A-1 Prior to issuance of building permits, lighting plans and signage plans for residential or non-residential development shall be reviewed by the Community Development Department to ensure that minimal light intrusion and spillover into adjacent residential areas occurs.		
	A-2 Prior to the issuance of building permits for residential and non-residential development, and during the master plan review process for future development in the project area, the Director of Community Development shall ensure that mirrored and highly reflective surfaces are discouraged or, where proposed, shall be accompanied by a design-level glare impact analysis that demonstrates no adverse visual impairment to motorists or other visual nuisance occurs.		
	Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.		
5.2 AGRICULTURE RESOURCES			
5.2-1 Development pursuant to the 2012 Modified Project would convert 13 acres of prime farmland to zoning designation 1.4 Preservation to accommodate the Relocated Wildlife Corridor Feature, unlike under the 2011 Approved Project.	Plans, Programs, and Policies PPP 2-1 The City shall continue to implement the Agricultural Legacy Program outlined in City of Irvine General Plan Open Space and Conservation Element. Objective L-10 is intended to mitigate the conversion of agricultural land to nonagricultural uses citywide by facilitating limited-scale agricultural operations and programs on public lands within Irvine. As part of the Agricultural Legacy Program, specific sites in Irvine will be identified and made available for metro-farming within five years. Metro-farming generally includes small-scale agricultural operations and activities that can be accommodated in an urban environment. Such activities could include, but not be limited to, small-scale specialty farming, model farming, heritage farming, and community service/educational farming. Project Design Features There are no PDFs of the 2012 Modified Project that apply. Applicable Mitigation Measures from the 2011 Certified EIR	Less than significant	Less than significant

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*Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation*

<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
	<p>This DSSEIR proposes to make certain modifications to the agricultural resources mitigation measures adopted by the City in the MMRP for the 2011 Approved Project. Modifications to the original mitigation measure are identified in strikeout text to indicate deletions and <u>underlined</u> to signify additions. The proposed changes to Mitigation Measure AG-1 eliminate obsolete references to prior Standard Conditions. The proposed changes to Mitigation Measure AG1 would not change its operation.</p> <p>AG-1 In order to encourage agriculture as an interim land use pending development on the project site by warning future residents that they are buying or renting a house adjacent to existing agricultural operations, City Of Irvine Standard Discretionary Case Condition 8.4 and City Of Irvine Standard Subdivision Condition 3.4 regarding disclosure statements shall be amended to include the following for subdivisions proposed adjacent to existing agricultural operations:</p> <p style="padding-left: 40px;">Prior to issuance of building permits, the applicant shall submit, and the Director of Community Development shall have approved, a completed occupancy disclosure form for the project. The approved disclosure form, along with its attachments, shall be included as part of the rental/lease agreement and as part of the sales literature for the project. The disclosure statement shall include the following information:</p> <p style="padding-left: 80px;">Continuation of agricultural operations adjacent to the site and their potential effects (spraying of pesticides, noise, dust, odor, etc.) on future residents or tenants.</p> <p>AG-2 Heritage and community service/educational farming operations shall be encouraged within utility easements and other lands. Heritage farming is defined as small-scale specialty farming operations that can be accommodated in an urban environment. An example would be the Edible Landscape project located adjacent to Harvard within the Edison right-of-way.</p>		

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	AG-3 Future landowners and the City shall work cooperatively with farmers to minimize conflicts between agricultural operation and adjacent urban uses.		
	Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.		
5.2-2 With the approval of the proposed zone change, like the 2011 Approved Project, development pursuant to the 2012 Modified Project would not conflict with existing zoning of the 13 acres within the Proposed Project Site.	Plans, Programs, and Policies There are no PPPs that apply. Project Design Features There are no PDFs of the 2012 Modified Project that apply. Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR. Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.	Less than significant	Less than significant
5.3 AIR QUALITY			
5.3-1 Like the 2011 Approved Project, the 2012 Modified Project is consistent with the applicable air quality management plan.	Plans, Programs, and Policies PPP 3-1 SCAQMD Rule 201 – Permit to Construct: The SCAQMD requires developers who build, install, or replace any equipment or agricultural permit unit, which may cause new emissions of or reduce, eliminate, or control emissions of air contaminants to obtain a permit to construct from the Executive Officer. PPP 3-2 SCAQMD Rule 402 – Nuisance Odors: The SCAQMD prohibits the discharge of any quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health or safety of any such persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property to be emitted within the SoCAB. PPP 3-3 SCAQMD Rule 403 – Fugitive Dust (PM ₁₀ and PM _{2.5}): The SCAQMD prohibits any person to cause or allow the emissions of fugitive dust from	Less than significant	Less than significant

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	<p>any active operation, open storage pile, or disturbed surface area such that: (a) the dust remains visible in the atmosphere beyond the property line of the emission source; or (b) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook) if the dust emission is the result of movement of a motorized vehicle.</p> <p>PPP 3-4 SCAQMD Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities: This rule specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.</p> <p>PPP 3-5 SCAQMD Rule 445 – Wood-Burning Devices: SCAQMD prohibits installation of wood-burning devices such as fire places and wood-burning stoves in new development unless the development is located at an elevation above 3,000 feet or if existing infrastructure for natural gas service is not available within 150-feet of the development. All fireplaces installed within the Proposed Project Site will be natural gas fueled fireplaces.</p> <p>Project Design Features PDFs 4-1, 4-2, 4-7, and 4-8 apply (see section below).</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		

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5.3-2 Construction emissions of the 2012 Modified Project would, like the 2011 Approved Project, exceed SCAQMD's emissions thresholds for VOC, NO _x , CO, PM ₁₀ , and PM _{2.5} .	<p>Plans, Programs, and Policies PPPs 3-1 through 3-4 apply.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR</p> <p>AQ-1 Prior to the start of demolition and construction within the project area, adjacent sensitive receptors shall be informed of the planned demolition and construction activities. Measures to avoid significantly impacting these receptors shall be developed and implemented by the project proponent in coordination with these uses. Other applicable mitigation measures such as erection of fences around construction areas; staggered use of equipment near sensitive receptors; diversion of truck trips away from receptors; etc.; shall be employed as necessary. Compliance with this measure shall be verified by the Director of Community Development.</p> <p>AQ-2 Prior to the commencement of construction activities required to demolish and/or remove existing DON infrastructure, including runways, the Director of Community Development shall receive and approve a construction emissions mitigation plan from the chosen demolition contractor. Prior to the issuance of grading permits, the application of any future development project shall submit, and the Director of Community Development shall approve a construction emissions mitigation plan. The plans shall identify implementation procedures for each of the following emissions reduction measures and all feasible mitigation measures shall be implemented. If certain measures are determined infeasible, an explanation thereof shall be provided.</p> <ul style="list-style-type: none"> Utilize off-road construction equipment that conforms to Tier 3 of the United States Environmental Protection Agency, or higher emissions standards for construction equipment over 50 horsepower that are commercially available. The construction contractor shall be made aware of this requirement prior to the start of construction activities. 	Significant	<p>Significant and Unavoidable Like the 2011 Approved Project, the 2012 Modified Project (with or without the optional conversion) would result in significant and unavoidable short-term construction air quality impacts due to emissions of VOC, NO_x, CO, PM₁₀ and PM_{2.5}. PPPs 3-1 through 3-4 and Mitigation Measures AQ-1 and AQ-2 from the 2011 Approved Project would reduce construction emissions impacts to the extent feasible. However, like the 2011 Approved Project, Impact 5.3-2 would remain significant and unavoidable even after mitigation.</p>

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	<p>Use of commercially available Tier 3 or higher off-road equipment, which is:</p> <ul style="list-style-type: none"> • Year 2006 or newer construction equipment for engines rated equal to 175 horsepower (hp) and greater; • Year 2007 and newer construction equipment for engines rated equal to 100 hp but less than 175 hp; and • Year 2008 and newer construction equipment for engines rated equal to or greater than 50 hp but less than 100 hp. <p>The requirement to use such equipment shall be stated on grading plans. The construction contractor shall maintain a list of all operating equipment in use on the project site. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site.</p> <ul style="list-style-type: none"> • Water exposed soils at least three times daily and maintain equipment and vehicle engines in good condition and in proper tune. • Wash off trucks leaving the site. • Replace ground cover on construction sites when it is determined that the site will be undisturbed for lengthy periods. • Reduce speeds on unpaved roads to less than 15 miles per hour. • Halt all grading and excavation operations when wind speeds exceed 25 miles per hour. • Suspend all emission generating activities during smog alerts. 		

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	<ul style="list-style-type: none">• Use propane or butane-powered on-site mobile equipment instead of diesel/gasoline, whenever feasible.• Properly maintain diesel-powered on-site mobile equipment.• Prohibit nonessential idling of construction equipment to five minutes or less in compliance with California Air Resources Board's Rule 2449.• Sweep streets with SCAQMD Rule 1186 compliant PM₁₀-efficient vacuum units at the end of the day if substantial visible soil material is carried over to the adjacent streets.• Use electricity from power poles rather than temporary on-site diesel or gasoline-powered generators, whenever feasible.• Use of low-VOC asphalt.• Maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and tarp materials with a fabric cover or other suitable means.• Provide temporary traffic controls (e.g., flag persons) during all phases of construction to ensure minimum disruption of traffic.• Schedule construction activities that affect traffic flow on adjoining streets to off-peak hours to the extent possible.• Reroute construction trucks away from congested streets, whenever feasible.• Provide dedicated turn lanes for movement of construction trucks		

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	<p>and equipment on and off-site, whenever feasible.</p> <ul style="list-style-type: none"> Use coatings and solvents with a volatile organic compound (VOC) content lower than required under SCAQMD Rule 1113 (i.e., Super Compliant Paints). All architectural coatings shall be applied either by (1) using a high-volume, low-pressure spray method operated at an air pressure between 0.1 and 10 pounds per square inch gauge to achieve a 65 percent application efficiency; or (2) manual application using a paintbrush, hand-roller, trowel, spatula, dauber, rag, or sponge, to achieve a 100 percent application efficiency. The construction contractor shall also use precoated/natural colored building, where feasible. Use of low-VOC paints and spray method shall be included as a note on architectural building plans. <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		
5.3-3 Long-term operation of the 2012 Modified Project would, like the 2011 Approved Project, exceed SCAQMD's thresholds for VOC, NO _x , CO, and PM _{2.5} .	<p>Plans, Programs, and Policies PPPs 3-1 and 3-5 apply.</p> <p>Project Design Features Implementation of PDFs 4-1, 4-2, 4-7, 4-8, and 4-9 apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR The following mitigation measures were included in the 2011 Certified EIR and imposed by the City for the 2011 Approved Project. These mitigation measures apply to the 2012 Modified Project, and have been renumbered for the purposes of this DSSEIR.</p> <p>AQ-3 Prior to the issuance of building permits for any future development, the applicant shall submit, and Director of Community Development shall have approved, an operation-emissions mitigation plan. The plan shall identify implementation procedures for each of the following emissions reduction measures and all feasible mitigation measures shall be implemented. If</p>	Significant	<p>Significant and Unavoidable Like the 2011 Approved Project, long-term operation of the 2012 Modified Project (with, and without the optional conversion) would result in significant and unavoidable impacts due to emissions of VOC, NO_x, CO, and PM_{2.5}. PPP 3-1, 3-5, PDFs 4-1, 4-2, 4-7, 4-8 and 4-9, and Mitigation Measures AQ-3 through AQ-5 contained in the 2011 Approved Project would reduce operational phase air quality impacts to the extent feasible. However, like the</p>

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	<p>certain measures are determined infeasible, an explanation thereof shall be provided.</p> <ul style="list-style-type: none"> • Utilize built-in energy-efficient appliances to reduce energy consumption and emissions. • Utilize energy-efficient and automated controls for air conditioners and lighting to reduce electricity consumption and associated emissions. • Install special sunlight-filtering window coatings or double-paned windows to reduce thermal loss, whenever feasible. • Utilize light-colored roofing materials as opposed to dark roofing materials to conserve electrical energy for air-conditioning. • Provide shade trees in residential subdivisions as well as public areas, including parks, to reduce building heating and cooling needs, whenever feasible. • Ensure that whenever feasible, commercial truck traffic is diverted from local roadways to off-peak periods. • Centralize space heating and cooling for multiple-family dwelling units and commercial space. • Orient buildings north/south for reducing energy-related combustion emissions. • Use solar energy, when feasible. • Use high rating insulation in walls and ceilings. 		2011 Approved Project, Impact 5.3-3 would remain significant and unavoidable even after mitigation.

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	<p>AQ-4 Prior to the issuance of building permits, future sales information on available housing and employment opportunities within the project area shall be provided to employees and residents of the project area, so as to encourage employees to live within the residential developments planned on-site and future residents to find employment nearby.</p> <p>AQ-5 Prior to the issuance of building permits, the applicant shall demonstrate to the satisfaction of the Director of Community Development that future employment generating nonresidential development shall include measures to reduce vehicle trips including: the promotion of carpool incentives and alternative work schedules, easy access to public transit systems, trail linkages between uses, low emissions vehicles fleets, and the provision of on-site facilities such as banking and food courts, and bicycle parking facilities, and other transportation demand management measures, as deemed appropriate.</p>		
	<p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		
	<p>Plans, Programs, and Policies PPPs 3-3 and 3-4 apply.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR Implementation of Mitigation Measures AQ1 and AQ2.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		
5.3-4 As compared to the 2011 Approved Project, construction of the 2012 Modified Project would not expose sensitive receptors to significant air pollutant concentrations.		Less than significant	Less than significant

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5.3-5 As compared to the 2011 Approved Project, operation of the 2012 Modified Project would not expose sensitive receptors to elevated concentrations of CO at intersections.	Plans, Programs, and Policies There are no PPPs that apply to this impact. Project Design Features There are no PDFs of the 2012 Modified Project that apply. Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were outlined in the 2011 Certified EIR. Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.	Less than significant	Less than significant
5.4 GREENHOUSE GAS EMISSIONS			
5.4-1 Although the 2012 Modified Project's GHG emissions would be greater than the 2011 Approved Project's GHG emissions, like the 2011 Approved Project, the 2012 Modified Project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment.	Plans, Programs, and Policies PPP 4-1 City of Irvine Construction and Demolition ("C&D") Debris Recycling and Reuse Ordinance: The C&D ordinance requires that 1) all residential projects of more than one unit, 2) nonresidential developments on 5,000 square feet or larger, and 3) nonresidential demolition/renovations with more than 10,000 square feet of building recycle or reuse a minimum of 75 percent of concrete and asphalt and 50 percent of nonhazardous debris generated. PPP 4-2 SCAQMD Rule 445 – Wood-Burning Devices: SCAQMD prohibits installation of wood-burning devices such as fire places and wood-burning stoves in new development unless the development is located at an elevation above 3,000 feet or if existing infrastructure for natural gas service is not available within 150-feet of the development. All fireplaces installed within the Proposed Project Site will be natural gas fueled fireplaces. PPP 4-3 Building and Energy Efficiency Standards (CCR Title 24): Prior to the issuance of a building permit for residential, commercial, or office structures in the Proposed Project Site, development plans for these structures shall be required to demonstrate that the project meets the 2008 Building and Energy Efficiency Standards. Commonly known	Less than significant	Less than significant

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	<p>as Title 24, these standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2008 standards are approximately 15 percent more energy efficient than the 2005 Building and Energy Efficiency Standards. Plans submitted for building permits shall include written notes demonstrating compliance with the 2008 energy standards and shall be reviewed and approved by the Public Utilities Department prior to issuance of building permits. Design strategies to meet this standard may include maximizing solar orientation for daylighting and passive heating/cooling, installing appropriate shading devices and landscaping, utilizing natural ventilation, and installing cool roofs. Other techniques include installing insulation (high R value) and radiant heat barriers, low-e window glazing, or double-paned windows.</p> <p>PPP 4-4 Title 24 Code Cycles: Net-Zero Buildings (Residential & Non-Residential): The California Public Utilities Commission adopted its Long-Term Energy Efficiency Strategic Plan on September 18, 2008, presenting a roadmap for all new residential and commercial construction to achieve a zero-net energy standard. This Plan outlines the goal of reaching zero net energy in residential construction by 2020 and in commercial construction by 2030. Achieving this goal will require increased stringency in each code cycle of California's Energy Code (Title 24).</p> <p>PPP 4-5 California Renewable Portfolio Standard: CARB's Renewable Portfolio Standard (RPS) is a foundational element of the State's emissions reduction plan. In 2002, Senate Bill 1078 established the California RPS program, requiring 20 percent renewable energy by 2017. In 2006, Senate Bill 107 advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II. On September 15, 2009, Governor Arnold Schwarzenegger signed Executive Order S-21-09 directing CARB to adopt regulations increasing RPS to 33 percent by 2020. These</p>		

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	<p>mandates apply directly to investor-owned utilities, in this case Southern California Edison ("SCE").</p> <p>PPP 4-6 California Low Carbon Fuel Standard: On January 18, 2007, Governor Arnold Schwarzenegger issued Executive Order S-1-07 requiring the establishment of a Low Carbon Fuel Standard ("LCFS") for transportation fuels. This statewide goal requires that California's transportation fuels reduce their carbon intensity by at least 10 percent by 2020. Regulatory proceedings and implementation of the LCFS have been directed to CARB. The LCFS has been identified by CARB as a discrete early action item in the Scoping Plan. CARB expects the LCFS to achieve the minimum 10 percent reduction goal; however, many of the early action items outlined in the Scoping Plan work in tandem with one another. To avoid the potential for double-counting emission reductions associated with AB 1493 (Pavley), the Scoping Plan has modified the aggregate reduction expected from the LCFS to 9.1 percent.</p> <p>PPP 4-7 Federal Corporate Average Fuel Economy ("café") Standards: The 2007 Energy Bill creates new federal requirements for increases in fleetwide fuel economy for passenger vehicles and light trucks. The federal legislation requires a fleetwide average of 35 miles per gallon (mpg) to be achieved by 2020. The National Highway Traffic Safety Administration is directed to phase in requirements to achieve this goal. Analysis by CARB suggests that this will require an annual improvement of approximately 3.4 percent between 2008 and 2020.</p> <p>PPP 4-8 California Assembly Bill 1493 – Pavley Standards: On July 22, 2002, Governor Gray Davis signed Assembly Bill 1493 requiring CARB to develop and adopt regulations designed to reduce greenhouse gases emitted by passenger vehicles and light-duty trucks beginning with the 2009 model year. The standards set within the Pavley regulations are expected to reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016.</p>		

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	<p>California had petitioned the USEPA in December 2005 to allow these more stringent standards and California executive agencies have repeated their commitment to higher mileage standards. On July 1, 2009, the USEPA granted California a waiver that will enable the state to enforce stricter tailpipe emissions on new motor vehicles.</p> <p>PPP 4-9 SB 375: SB 375 requires the reduction of GHG emissions from light trucks and automobiles through land use and transportation efforts that will reduce vehicle miles traveled ("VMT"). In essence, SB 375's goal is to control GHGs by curbing urban sprawl and through better land use planning. SB 375 essentially becomes the land use contribution to the GHG reduction requirements of AB 32, California's global warming bill enacted in 2006. The 2012 Modified Project is consistent with SB 375 strategies to reduce VMT and associated GHG emissions in that it represents a compact, mixed-use development, improves the jobs/housing balance in the City and the Orange County Council of Governments Subregion, and provides access to mass transit. According to SCAG's 2008 Regional Comprehensive Plan, SCAG's Land Use and Housing Action Plan can be expected to result in a 10 percent reduction in VMT in 2035 when compared to current trends.</p> <p>PPP 4-10 Transit Service to LAX: Although the City is serviced by John Wayne Airport, Los Angeles International Airport ("LAX") is the regional air transportation hub. Providing direct transit service from the City to LAX can reduce single passenger trips to this destination. The Los Angeles World Airports operates three Flyaway shuttles that provide nonstop airport service to and from Westwood, Van Nuys, and Downtown Los Angeles via the Flyaway program. Since November 16, 2009, a Flyaway shuttle from the Irvine Metrolink Station to LAX provides nonstop service.</p>		

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	<p>PPP 4-11 Comprehensive Signal Retiming and Coordination Program: Emissions are highest at the lowest travel speeds. The City is currently retiming and coordinating signals throughout Irvine under its ITEMS (Irvine Traffic Engineering System) program. A program to retime and coordinate traffic signals would produce more even traffic flows, so that vehicles are not starting and stopping constantly. These types of programs can improve vehicular level of service ("LOS"), thereby decreasing emissions for the same volume of vehicles.</p> <p>PPP 4-12 Waste Reduction: The City adopted a Zero Waste program in 2007 to approach waste management. The City recovers approximately 66 percent of its waste for recycling and composting, which exceeds the state's AB 939 waste diversion goals. Furthermore, waste haulers establish rate schedules according to bin size and frequency of collection. Commercial customers that subscribe to smaller bins (e.g., 2 cubic-yard bins) are routinely charged less by haulers. This pricing structure encourages waste reduction and recycling, and tends to minimize hauler pickups.</p> <p>Project Design Features PDF 4-1 Compact/Mixed-Use Development: The California Energy Commission ("CEC") considers compact development forms beneficial for minimizing energy consumption that leads to greenhouse gas emissions. In fact, the CEC's report on the connections between land use and climate change identifies density as the project feature most predictive of the number of vehicle trips and vehicle miles traveled ("VMT") by project occupants. The 2012 Modified Project intensified the residential development on the Proposed Project Site as compared to the 2011 Approved Project, and locates additional housing opportunities near major employment and transportation centers. Doing so will tend to reduce VMT on a local and regional basis.</p>		

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	<p>PDF 4-2 High Rate of Internal Trip Capture: With the inclusion of a mix of land uses including office, commercial, industrial, and residential in the Proposed Project Site, the 2012 Modified Project significantly reduces trips outside the Proposed Project Site. This reduces trip length and congestion on the local circulation system outside the Proposed Project Site.</p> <p>PDF 4-3 Low-Flow Fixtures: The 2012 Modified Project incorporates low-flow water fixtures that will meet the requirements of the California Green Building Standards Code standards. Prior to issuance of building permit, the Applicant or its successor shall submit evidence to the satisfaction of the Director of Community Development that toilets, urinals, sinks, showers, and other water fixtures installed on-site are low-flow water fixtures that meet the California Green Building Standards Code standards.</p> <p>PDF 4-4 Landscaping and Irrigation Systems: The 2012 Modified Project incorporates automated, high-efficiency landscaping irrigation systems on all master landscaped areas that reduce water use, such as evapotranspiration “smart” weather-based irrigation controllers, and bubbler irrigation; low-angle, low-flow spray heads; moisture sensors; and use of a California-friendly landscape palette. Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the City’s Director of Community Development that such landscaping irrigation systems will be installed so as to make the 2012 Modified Project consistent with the intent of the California Water Conservation in Landscaping Act of 2006 (“AB 1881”), including provisions to reduce the wasteful, uneconomic, inefficient, and unnecessary consumption of water.</p> <p>PDF 4-5 Use of Reclaimed Water on All Master Landscaped Areas: Prior to approval of landscape plans, the Applicant or its successor shall submit evidence to the satisfaction of the City’s Director of Community Development and the Irvine Ranch Water District</p>		

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	<p>(“IRWD”) that the landscape plans incorporate the use of reclaimed water in all master landscaped areas, including master landscaped commercial, multifamily, common, roadways, and park areas. Master landscapes shall also incorporate weather-based controllers and efficient irrigation system designs to reduce overwatering, combined with the application of a California-friendly landscape palette.</p> <p>PDF 4-6 Material Recovery: The 2012 Modified Project incorporates measures to reduce waste generated by Proposed Project Site residents, occupants and visitors, and to encourage recycling of solid wastes, utilizing the Orange County Integrated Waste Management Department's material recovery facilities to recycle glass, plastic, cans, junk mail, paper, cardboard, greenwaste (e.g., grass, weeds, leaves, branches, yard trimmings, and scrap wood), and scrap metal. Future employees, residents, and customers would participate in these programs. These measures include the requirement to include on-site recycling facilities at all commercial, retail, industrial, and multi-family residential developments. In addition, educational materials identifying available recycling programs shall be distributed to all land uses, including single-family residential.</p> <p>PDF 4-7 Energy Star Appliances: EnergyStar appliances (excluding refrigerators), such as dishwashers, clothes washers, clothes dryers, air conditions, furnaces, and water heaters, shall be offered or installed in all residential dwelling units.</p> <p>PDF 4-8 Building Energy Efficiency: Residential dwellings and non-residential buildings will be constructed so that they achieve 15 percent higher energy efficiency than the applicable standards set forth in the 2008 California Building and Energy Efficiency Standards (Title 24, Part 6 of the California Building Code) or meet the standards in effect at the time of issuance of building permit,. The Energy Commission's 2013 Building Energy Efficiency Standards are 25 percent more efficient than the 2008 standards for residential</p>		

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	<p>construction and 30 percent more efficient for nonresidential construction. The 2013 Energy Efficiency Standards, which take effect on January 1, 2014, offer builders more efficient windows, insulation, lighting, ventilation systems and other options that would reduce energy consumption in homes and businesses.</p> <p>PDF 4-9 Carbon Sequestration: The 2012 Modified Project incorporates landscaping and a plant palette that will foster carbon sequestration within the Proposed Project Site that is comparable to the landscaping and plant palette that was already incorporated into the 2011 Approved Project.</p> <p>PDF 4-10 Softscape Landscaped Areas: Consistent with sustainable practices and modern landscaping standards and consistent with the landscaping used in the 2011 Approved Project, the 2012 Modified Project reduces softscape (e.g., plants/horticultural elements of landscape design) landscaped areas by 28 percent as compared to the default assumption in CalEEMod.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		
5.4-2 Like the 2011 Approved Project, the 2012 Modified Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions.	<p>Plans, Programs, and Policies Implementation of PPPs 4-1 and 4-12.</p> <p>Project Design Features Implementation of PDFs 4-1 through 4-10.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant

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Environmental Impact	Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]	Level of Significance Before Additional Mitigation	Level of Significance After Additional Mitigation
5.5 HAZARDS AND HAZARDOUS MATERIALS			
5.5-1 Like the 2011 Approved Project the 2012 Modified Project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	<p>Plans, Programs, and Policies</p> <p>PPP 5-1 If any underground storage tanks (“USTs”) are encountered during site grading and excavation activities, they shall be removed in accordance with the existing standards and regulations of, and oversight by, the Orange County Health Care Agency (“OCHCA”), based on compliance authority granted through the California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Tank Regulations. The process for UST removal is detailed in the OCHCA’s “Underground Storage Tanks: The Basics.” Soil samples from areas where storage tanks have been removed or where soil contamination is suspected shall be analyzed for hydrocarbons including gasoline and diesel in accordance with procedures set forth by OCHCA. If hydrocarbons are identified in the soil, the appropriate response/remedial measures will be implemented as directed by OCHCA with support review from the Regional Water Quality Control Board until all specified requirements are satisfied and a Tank Closure Letter is issued. Any aboveground storage tank (“AST”) in existence at the commencement of site development shall be removed in accordance with all applicable regulations under the oversight of Orange County Fire Authority. Compliance requirements relative to the removal/closure of storage tanks are set forth through the California Health and Safety Code, Sections 25280 through 25299.</p> <p>PPP 5-2 During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations, Section 1532.1, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers exposed to lead. Lead-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision(s) of the California Health and Safety Code.</p> <p>PPP 5-4 Federal law requires compliance with Rule 29 of the Code of Federal Regulations (“CFR”) Part 1926. Prior to site demolition activities, building</p>	Less than significant	Less than significant

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	<p>materials shall be carefully assessed for the presence of lead-based paint, and its removal, where necessary, must comply with state and federal regulations, including Occupational Safety and Health Administration (“OSHA”) 29 CFR Part 1926. The OSHA rule establishes standards for occupational health and environmental controls for lead exposure. The standard also includes requirements addressing exposure assessment, methods of compliance, respiratory protection, protective clothing and equipment, hygiene facilities and practices, medical surveillance, medical removal protection, employee information and training, signs, recordkeeping, and observation of monitoring. Furthermore, the requirements of California Code of Regulations, Title 17, Division 1, Chapter 8, identify procedures that must be followed for accreditation, certification, and work practices for lead-based paint and lead hazards. Section 36100 thereof specifically sets forth requirements for lead-based paint abatement in public and residential buildings.</p> <p>PPP 5-5 Prior to site demolition activities, building materials must be carefully assessed for the presence of asbestos-containing materials (“ACM”), and removal of this material, where necessary, must comply with state and federal regulations, including SCAQMD Rule 1403, which specifies work practices with the goal of minimizing asbestos emissions during building demolition and renovation activities, including the removal and associated disturbance of ACMs. The requirements for demolition and renovation activities include asbestos surveying; notification; ACM removal procedures and time schedules; ACM handling and cleanup procedures; and storage, disposal, and landfill disposal requirements for asbestos-containing waste materials.</p> <p>PPP 5-6 During site decommissioning and demolition activities, hazardous wastes must be managed in accordance with the requirements of Title 22, Division 4.5 of the California Code of Regulations. Title 22 sets forth the requirements with which hazardous-waste generators, transporters, and owners or operators of treatment, storage, or disposal facilities must comply. These regulations include the requirements for packaging, storage,</p>		

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	<p>labeling, reporting, and general management of hazardous waste prior to shipment. In addition, the regulations identify standards applicable to transporters of hazardous waste such as the requirements for transporting shipments of hazardous waste, manifesting, vehicle registration, and emergency accidental discharges during transportation.</p> <p>PPP 5-7 During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations, Section 1529, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practices by workers exposed to asbestos. Asbestos-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision(s) of the California Health and Safety Code.</p> <p>PPP 5-8 Evidence of soil and/or groundwater contamination (e.g., chemical odors, staining) unrelated to above/underground storage tank releases may be encountered during site development. The appropriate agency (e.g., OCHCA, DTSC, or the RWQCB) shall be notified if these conditions are encountered during construction or grading activities. With their oversight, an environmental site assessment shall be completed and a determination shall be made as to whether cleanup is required. Cleanup activities are required to be consistent with all applicable federal, State and local rules, regulations, and laws. A cleanup would not be considered complete until confirmatory samples of soil and/or groundwater reveal levels of contamination below the standards established by the oversight agency. Alternatively, a risk assessment may be prepared for the site to determine that there are no human or environmental risks associated with leaving contamination below specific levels in place. Construction in the impacted area shall not proceed until a “no further action” clearance letter or similar determination is issued by the oversight agency, or until a land use covenant is implemented.</p>		

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	<p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR</p> <p>HH-1 For any remaining structures known to contain ACMs that will be renovated and/or demolished, HF shall ensure that all asbestos is removed and disposed of in accordance with applicable federal, state and local regulatory requirements.</p> <p>Prior to occupancy, renovation or demolition of any remaining structures constructed before October 1988, and in which the presence of ACMs is unknown, an asbestos survey shall be conducted by Heritage Fields. This requirement can be waived if an architect or project engineer responsible for the construction of the structure or an accredited asbestos inspector signs a statement that no ACM was specified as a building material, and to the best of their knowledge, no ACMs were used as a building material. If the asbestos survey identifies ACMs, the applicant shall ensure that all asbestos is removed and disposed of in accordance with applicable federal, state and local regulatory requirements.</p> <p>Any existing structures in which ACMs have been identified and which will remain in use shall be addressed in an Operation and Maintenance Plan and must be managed in accordance with applicable laws.</p> <p>Any renovation and/or LBP abatement activities on residential units at former MCAS El Toro, shall be conducted in accordance with all applicable federal, state and local regulatory requirements.</p> <p>HH-2 The portions of the Proposed Project Site located on the active Installation Restoration Program (“IRP”) Sites listed in Table 5.5-2, Action Required IRP Sites and Zoning – 2012 Modified Project, of the DSSEIR for the 2012 Modified Project shall be used only in accordance with the requirements of the applicable Final FOST or Finding of Suitability to Lease, including in</p>		

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	strict compliance with all lease restrictions (such as restrictions against soil or groundwater disturbance without approval from the Navy and regulators) and all institutional controls (such as restrictions against disturbing the integrity of physical remedial components like caps or groundwater treatment systems and other restrictions imposed by the Navy).		
	HH-4 Prior to issuance of occupancy permits of any existing structure at the former MCAS El Toro, a fire life-safety evaluation of the structure including recommendations for improvements required for compliance with current Building Codes for use of existing structures adopted by the City and plans for any required improvements shall be submitted to the Chief Building Official for review and approval.		
	HH-5 Prior to the issuance of a grading permit, the applicant shall prepare and the Director of Community Development shall approve a protocol plan (including but not limited to worker training, health and safety precautions, additional testing requirements, and emergency notification procedures) in the event that unknown hazardous materials are discovered during grading, construction, and/or related development activities. Additionally, said protocol plan will be revised should the discovery of previously unknown hazardous materials be made during any of the above mentioned development activities. The applicant and/or property owner that discovers contamination due to past military operations not previously identified by the DON shall be responsible for notifying the DON, appropriate regulatory agencies, and the Director of Community Development of the City in a timely manner. Additionally, said Protocol Plan shall be revised should the discovery of previously unknown hazardous materials be made during any of the above mentioned development activities.		
	HH-6 The City shall develop and maintain the location and status, as well as other pertinent information, of all monitoring wells on the former MCAS El Toro in a geographic information systems database ("GIS"). The City		

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	<p>will review all permit applications on the former air station for monitoring well locations that may be affected by a permit, and require applicants to maintain appropriate access. Access to monitoring wells will be limited to authorized personnel.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		
5.5-2 Like the 2011 Approved Project, the 2012 Modified Project could expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, but not to a level that would be significant.	<p>Plans, Programs, and Policies PPP 5-3 Prior to approval of a conditional use permit, project applicants shall prepare a Fire Master Plan for submittal to the Orange County Fire Authority (“OCFA”) consistent with OCFA Guideline B-09 (Fire Master Plans for Commercial and Residential Development).</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR This DSSEIR proposes that Mitigation Measure HH3 from the 2011 Certified EIR be modified for the 2012 Modified Project as set forth below; <u>underlined text</u> is used to signify new additions. The modification is being made to note that the high fire hazard maps are occasionally updated and does not affect the substance of the mitigation measure.</p> <p>HH-3 The Community Development Department, in coordination with the Orange County Fire Authority (“OCFA”), will be responsible for review of all development plans, which would include evaluation of very high fire severity zones, special fire protection plans, and any requirements for fuel modification zones. Projects potentially impacted by wildland fire hazards will be subject to OCFA Guidelines for “Development Within and Exclusion from Very High Fire Severity Zones” and “Fuel Modification</p>	Less than significant	Less than significant

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	Plans and Maintenance.” Additionally, all demolition, renovation, and construction activities in the project area will be subject to review by OCFA to ensure adequate fire protection, water flow, emergency access, design features, etc., according to the standards of the Uniform Fire Code and the California Fire Code. Due to the implementation of these standard fire protection procedures <u>and based on the revised Fire Hazard Maps</u> , the 2012 Modified Project is not anticipated to result in significant short- or long-term adverse impacts related to fire hazards		
	Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.		
5.6 HYDROLOGY AND WATER QUALITY			
5.6.1-1 The 2012 Modified Project would not substantially increase surface water flows into drainage systems as compared to the 2011 Approved Project.	Plans, Programs, and Policies PPP 6-1 Prior to the issuance of a precise grading permit, the applicant shall submit a hydrology and hydraulic analysis of the site. The analysis shall be prepared by a professional civil engineer versed in flood control analysis and shall include the following information and analysis (Standard Condition A.6): <ul style="list-style-type: none"> a. Hydrology/hydraulic analysis of 100-year surface water elevation at the project site to determine building elevation or flood proofing elevation. b. Analysis of existing and post-development peak 100-year storm flow rates, including mitigation measures to reduce peak flows to existing conditions. c. An analysis demonstrating that the volume of water ponded on the site and stored underground in the drainage system outside of the building envelope in the proposed condition is greater than or equal to the corresponding volume in the existing condition. The water surface used to determine the ponded volume shall be based on the water 	Less than significant	Less than significant

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	<p>surface in the major flood control facility that the site is tributary to.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR H/WQ3 Prior to approval of the first tentative tract or parcel map in the project area, detailed hydrologic and hydraulic analysis shall be conducted. Studies and analysis shall be prepared in accordance with OCFCD methodologies and standards and the Flood Control Master Plan for San Diego Creek, as well as any additional guidelines in effect at the time of project design. Recommendations contained in the hydrology studies and/or hydraulic analysis to address drainage/flooding issues related to proposed development shall be implemented. Compliance with this measure shall be verified by the Community Development Department.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		
5.6.1-2 The 2012 Modified Project would not locate additional development areas within a 100-year flood hazard area as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies There are no PPPs that apply to the 2012 Modified Project.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR H/WQ4 Prior to issuance of a building permit for any unit within the 100-year floodplain, developers with property located in the newly delineated 100-year floodplain shall be required to construct such improvements as necessary to remove the property from the 100-year floodplain. Additionally, the developer shall prepare a Letter of Map Revision (LOMR) request to have the FIRMs revised to remove the development areas from the 100-year floodplain upon completion of the approved flood control facilities. The LOMR request shall be filed upon completion of design of the flood control improvements to contain or redirect the 100-year flood</p>	Less than significant	Less than significant

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	<p>flows away from the property.</p> <p>After the improvements are constructed, Record Drawings and a maintenance agreement with, or letter from, a public agency shall be submitted to FEMA to complete the LOMR process.</p>		
	<p>Additional Mitigation Measures for the 2012 Modified Project</p> <p>No additional mitigation measures are required.</p>		
5.6.2-1 The 2012 Modified Project would not substantially alter the drainage pattern of the Proposed Project Site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies</p> <p>PPP 6-2 Prior to the issuance of a precise grading permit, the applicant shall submit a groundwater survey of the entire site. The analysis shall be prepared by a geotechnical engineer versed in groundwater analysis and shall include the following information and analysis (Standard Condition A.7):</p> <ul style="list-style-type: none"> a. Potential for perched groundwater intrusion into the shallow groundwater zone upon buildout. b. Analysis for relief of groundwater buildup and properties of soil materials on-site. c. Impact of groundwater potential on building and structural foundations. d. Proposed mitigation to avoid potential for groundwater intrusion within five feet of the bottom of the footings. <p>PPP 6-3 This project will result in soil disturbance of one or more acres of land that has not been addressed by an underlying subdivision map. Prior to the issuance of preliminary or precise grading permits, the applicant shall provide the City Engineer with evidence that a Notice of Intent (NOI) and relevant Permit Registration Documents have been filed with the State Water Resources Control Board and that a Waste Discharge Identification (“WDID”) Number is issued. Such evidence shall consist of a copy of the NOI Receipt letter with WDID retrieved from the State Water Resources</p>	Less than significant	Less than significant

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	<p>Control Board Stormwater Multi-Application and Report Tracking System (SMARTS) website or the Regional Water Quality Control Board, or a letter from either agency stating that the NOI has been filed (Standard Condition A.10).</p> <p>PPP 6-4 Prior to the issuance of precise grading permits, the applicant shall submit, and the Director of Community Development shall have approved, a project water quality management plan (WQMP). The WQMP shall identify the best management practices that will be used on the site to control predictable pollutant runoff (Standard Condition A.13).</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR</p> <p>H/WQ-1 Prior to issuance of a grading permit, the applicant shall provide evidence that the development of the project area shall comply with City of Irvine adopted Grading and Water Quality Ordinances to ensure that the potential for soil erosion is minimized on a project-by-project basis. Specifically, the NPDES discharge permitting requirements to which the City is obligated will ensure that construction activities reduce, to the maximum extent feasible, the water quality impacts of construction activities. The NPDES permit guidance states that “industrial/commercial construction operations that result in a disturbance of one acre or more of total land area...and residential construction sites that result in the disturbance of five acres or more...shall be required to develop and implement BMPs...to control erosion and siltation and contaminated runoff from the construction sites.” Note: In March 2003 this provision will apply to residential construction sites that result in the disturbance of one acre or more.</p> <p>The City’s standard conditions of approval indicate that a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared prior to the approval of grading permits for any project site in order to reduce sedimentation and</p>		

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	<p>erosion. The SWPPP shall include the adoption of erosion and sediment control practices such as desilting basins and construction site chemical control management measures.</p> <p>Additionally, prior to the issuance of a grading permit, project applicants must submit, and the Director of Community Development or designee must have approved, a Water Quality Management Plan (WQMP). The WQMP must identify the Best Management Practices (BMPs) that will be used on the site to control predictable pollutant runoff after the site is occupied. Ongoing operations after construction would be subject to the Countywide Municipal NPDES Stormwater Permit, for which the City is a Co-Permittee. This WQMP shall identify, at a minimum, the routine, structural, and non-structural measures specified in the Countywide NPDES DAMP Appendix which they are applicable to a project, the assignment of long-term maintenance responsibilities (specifying the developer, parcel owner, maintenance association, lessee, etc.), and shall reference the location(s) of structural BMPs.</p> <p>Also in accordance with standard City project permitting and approval procedures, Notices of Intent (NOI) for coverage of projects under the General Construction Activity Storm Water Runoff Permit will be submitted to the State Water Resources Control Board prior to issuance of grading permits in the project area. This requirement will be met to the satisfaction of the Director of Community Development of any disturbance of one acre or more of soil in the project area. Also in force during the period of construction would be the General Dewatering NPDES permit of the Santa Ana RWQCB, as well as the provisions of the Countywide Permit.</p> <p>The Mitigation Measures will be implemented in accordance with local and State regulatory requirements. As future projects are planned and designed in the project area, specific BMPs and other water quality control methods will be utilized to reduce water quality degradation in the Newport Bay watershed. Future projects in the proposed project area will acknowledge</p>		

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	<p>and implement those additional requirements that may be imposed by RWQCB in the future. Compliance with these measures shall be verified by the Community Development Department.</p> <p>H/WQ-2 Prior to issuance of a grading permit, evidence (e.g., in the form of a construction management plan) shall be provided that demonstrates that all stormwater runoff and dewatering discharges from the project area shall be managed to the maximum extent practicable or treated as appropriate to comply with water quality requirements identified in the Santa Ana Regional Water quality Control Board Basin Plan, including Total Maximum Daily Load (TMDL) Implementation Plan adopted for this watershed.</p>		
	<p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		
5.6.2-2 The 2012 Modified Project would not significantly increase water pollutant concentrations in runoff from the Proposed Project Site during long-term operation or alter the quality of stormwater runoff, or otherwise substantially degrade water quality, as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies PPPs 6-2 through 6-4 apply.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR Implementation of Mitigation Measures H/WQ1 and H/WQ2.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant

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5.7 LAND USE AND PLANNING			
5.7-1 Like the 2011 Approved Project, implementation of the 2012 Modified Project would not be in conflict with an applicable adopted land use plan, policy or regulation.	<p>Plans, Programs, and Policies Although the Land Use section refers to several PPPs included in other Sections in Chapter 5, there are no PPPs specifically included or relied upon in the Land Use section..</p> <p>Project Design Features Although the Land Use section refers to several PDFs included in other Sections in Chapter 5, there are no PDFs specifically included or relied upon in the Land Use section..</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant
5.8 NOISE			
5.8-1 As compared to the 2011 Approved Project, the 2012 Modified Project would not substantially elevate traffic noise levels above local noise standards at noise-sensitive receptors proximate to the Proposed Project Site.	<p>Plans, Programs, and Policies There are no PPPs that apply to this impact.</p> <p>Project Design Features There are no PDFs that apply to the 2012 Modified Project.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant

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5.8-2 Like the 2011 Approved Project, stationary sources of noise generated by the 2012 Modified Project would comply with the City's Municipal Code and would not substantially increase ambient noise levels at sensitive receptors proximate to the Proposed Project Site.	<p>Plans, Programs, and Policies</p> <p>PPP 8-1 Title 6 (Public Works), Division 8 (Pollution), Chapter 2 (Noise) of the Irvine Municipal Code, also known as the City's Noise Ordinance, outlines the regulations necessary to control unnecessary, excessive and annoying noise in the City. The provisions of this chapter are applicable to nontransportation-related stationary noise sources. It outlines the noise level measurement criteria; establishes the noise zones and the maximum permitted exterior and interior noise standards in each zone; and discloses special noise provisions for construction, truck delivery and maintenance activities. For example, as outlined in Section 6-8-205 of the Noise Ordinance, no construction shall be permitted outside of the hours of 7:00 AM to 7:00 PM Monday through Friday and 9:00 AM to 6:00 PM Saturdays, unless a temporary waiver is granted by the Chief Building Official or authorized representative. Trucks, vehicles, and equipment that are making, or are involved with, material deliveries, loading, or transfer of materials, equipment service, maintenance of any devices or appurtenances for or within any construction project in the City shall not be operated or driven on City streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted shall take impact upon the community into consideration. No construction activity will be permitted outside of these hours except in emergencies including maintenance work on the City rights-of-way that might be required.</p> <p>PPP 8-2 Prior to the issuance of building permits for each structure or tenant improvement, other than a parking structure, the applicant shall submit a final acoustical report prepared to the satisfaction of the Director of Community Development. The report shall demonstrate that the development will be sound attenuated against present and projected noise levels including stationary, roadway, aircraft, helicopter, and railroad noise to meet City interior and exterior noise standards. The final acoustical report shall include all information required by the City's Acoustical Report Information Sheet (Form 42-48). The report shall be accompanied by a list identifying the sheet(s) of the building plans that include required sound</p>	Less than significant	Less than significant

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<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
	attenuation measures (Standard Condition 3.5)		
	<p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR</p> <p>N-1 Prior to the issuance of building permits for lots facing or located near major highways such as Irvine Boulevard, the project applicant shall provide a final noise study to the Director of Community Development that demonstrates how the exterior and interior noise requirements (65 dBA CNEL and 45 dBA CNEL, respectively) of the City's Noise Ordinance will be met. To attain the exterior and interior noise requirements, the final noise study shall include, but not be limited to the following measures and shall be shown on the final map:</p> <p>Exterior</p> <ul style="list-style-type: none"> • Provide a minimum six-foot high noise barrier for single-family detached residences shown in Figures 5.7-3 through 5.7-7 of this DSEIR. <p>Interior</p> <ul style="list-style-type: none"> • Provide a "windows closed" condition, requiring a means of mechanical ventilation (e.g., air conditioning) for all residential units. • Provide standard and upgraded dual-glazed windows with a minimum Sound Transmission Coefficient (STC) rating of 26. Specific window recommendations shall be made once final architectural plans are available and detailed interior noise reduction calculations can be calculated based on actual building assembly details. <p>N-2 Prior to authorization to use, occupy and/or operate, the project applicant shall submit evidence to the satisfaction of the Director of Community Development that occupancy disclosure notices for residential units with patios and/or balconies that do not meet the City's exterior noise standard of 65 dBA CNEL will be provided to all future tenants pursuant to the</p>		

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<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
	City's Noise Ordinance.		
	Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.		
5.8-3 Construction-related activities of the 2012 Modified Project would not result in a substantial increase in temporary construction noise as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies Implementation of PPPs 8-1, 8-2, and:</p> <p>PPP 8-3 Title 5 (Planning), Division 10 (Grading Code and Encroachment Regulations), Chapter 1 (Grading Code), Section 5-10-127.G (Import and Export of Earth Materials) of the Irvine Municipal Code, states that if a grading project includes the movement of earth material to or from the site in an amount considered substantial by the Chief Building Official, the permittee is required to submit the proposed haul route for review and approval by the Chief Building Official. Special conditions of the grading permit may be imposed that require alternate routes or other measures in consideration of the possible impact on the adjacent community environment or effect on the public right-of-way itself.</p> <p>Project Design Features PDF 8-1 Prior to issuance of grading permits, the project applicant or its successor shall incorporate the following measures as a note on the grading plan cover sheet to ensure that the greatest distance between noise sources and sensitive receptors during construction activities has been achieved, and that construction noise has been reduced.</p> <ul style="list-style-type: none"> During construction activities, all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, consistent with manufacturers' standards. All stationary construction equipment shall be placed so that emitted noise is directed away from the noise-sensitive receptors nearest the Proposed Project Site boundaries. Equipment shall be staged in areas that will create the greatest distance between construction-related noise sources and the noise- 	Less than significant	Less than significant

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	<p>sensitive receptors nearest the Proposed Project Site during all project construction.</p> <ul style="list-style-type: none"> All construction-related activities shall be restricted to the construction hours outlined in the City's Noise Ordinance (Municipal Code Section 6-8-205). Haul truck and other construction-related trucks traveling to and from the Proposed Project Site shall be restricted to the same hours specified for the operation of construction equipment. To the extent feasible, haul routes shall not pass directly by sensitive land uses or residential dwellings. Where construction will occur adjacent to any developed/occupied noise-sensitive uses, a construction-related noise mitigation plan shall be submitted the Director of Community Development for review and approval prior to the issuance of grading permits. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the 2012 Modified Project, through the use of such methods as: (1) temporary noise attenuation fences; (2) preferential location of equipment; and (3) use of current technology and noise-suppression equipment. Construction of planned sound walls that have been incorporated into the project design shall be installed prior to construction of the building foundation; or temporary sound blankets (fences typically composed of poly-vinyl-chloride-coated outer shells with absorbent inner insulation) shall be placed along the boundary of the Proposed Project Site facing the nearest noise-sensitive receptors during construction activities. <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p>		

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	Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.		
5.9 POPULATION AND HOUSING			
5.9-1 The 2012 Modified Project will generate additional population growth associated with the proposed increase in residential units as compared to the 2011 Approved Project, however, the 2012 Modified Project results in improved jobs-housing balance within the City and County.	<p>Plans, Programs, and Policies PPP 9-1 Compliance with the City's Housing Element - Compliance with the City's Housing Element policies provides a strategic blueprint to ensure the siting of new very low, low, and moderate income housing units in future development projects under the 2012 Modified Project to help the City continue to meet its State fair share housing targets. The Housing Ordinance mandates that all projects with 50 or more housing units shall set-aside 15 percent of the total units for very low, low, and moderate income households.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant

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5.10 PUBLIC SERVICES			
FIRE PROTECTION AND EMERGENCY SERVICES			
5.10-1 The 2012 Modified Project would locate 4,606 additional dwelling units within the Orange County Fire Authority service boundaries (or 5,806 additional dwelling units with the optional conversion), thereby increasing the requirement for fire protection facilities and personnel as compared to the 2011 Approved Project, but not to a significant level.	<p>Plans, Programs, and Policies</p> <p>PPP 10-1 Every project applicant shall comply with all applicable Orange County Fire Authority codes, ordinances, and standard conditions regarding fire prevention and suppression measures relating to water improvement plans, fire hydrants, automatic fire extinguishing systems, fire access, access gates, combustible construction, water availability, and fire sprinkler systems.</p> <p>PPP 10-2 Prior to the approval of the first certificate of occupancy the applicant shall arrange for and have passed an inspection, to be performed by the Police Department and the Orange County Fire Authority, to ensure compliance with the Emergency Access Plan requirements. The inspector shall verify test acceptance and locations of all Knox boxes and key switches as depicted on the approved plan (Standard Condition 4.9).</p> <p>PPP 10-3 Prior to the issuance of the first building permit, the applicant shall submit and have approved by the Chief of Police an Emergency Access Plan, which identifies and locates all Knox Boxes, Knox key switches, and Click2Enter radio access control receivers. Said plan shall be incorporated into the plan set approved for building permits (Standard Condition 3.17).</p> <p>PPP 10-4 Prior to the issuance of the first building permit, the applicant shall have executed a Secured Fire Protection Agreement with the Orange County Fire Authority (Standard Condition A.15).</p> <p>Project Design Features</p> <p>PDF 10-1</p> <p>The Relocated Wildlife Corridor Feature will be designed and planted in such a manner as to ensure that the planting plan does not create a fire hazard for adjacent development. Maintenance of vegetation within the</p>	Less than significant	Less than significant

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	<p>Relocated Wildlife Corridor Feature is not anticipated, but would be allowed as needed for fire control. Final approval of the planting schemes and palettes will require approval from the Orange County Fire Authority.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR</p> <p>HH-3 The Community Development Department, in coordination with the Orange County Fire Authority (OCFA), will be responsible for review of all development plans, which would include evaluation of very high fire severity zones, special fire protection plans, and any requirements for fuel modification zones. Projects potentially impacted by wildland fire hazards will be subject to OCFA Guidelines for “Development Within and Exclusion from Very High Fire Severity Zones” and “Fuel Modification Plans and Maintenance.” Additionally, all demolition, renovation, and construction activities in the project area will be subject to review by OCFA to ensure adequate fire protection, water flow, emergency access, design features, etc., according to the standards of the Uniform Fire Code and the California Fire Code. Due to the implementation of these standard fire protection procedures, the Proposed Project is not anticipated to result in significant short- or long-term adverse impacts related to fire hazards.</p> <p>HH-4 Prior to issuance of occupancy permits of any existing structure at the former MCAS El Toro a fire life-safety evaluation of the structure including recommendations for improvements required for compliance with current Building Codes for use of existing structures adopted by the City and plans for any required improvements shall be submitted to the Chief Building Official for review and approval.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		

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POLICE PROTECTION			
5.10-2 The 2012 Modified Project would locate an additional 4,606 dwelling units would increase the need for police protection facilities and personnel as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies PPPs 10-2 and 10-3 apply.</p> <p>PPP 10-5 The project applicant shall comply with all applicable requirements of the City of Irvine Uniform Security Code (Municipal Code Title 5, Division 9, Chapter 5).</p> <p>PPP 10-6 Prior to the issuance of the first building permit, a Construction Site Security Plan, per the Irvine Uniform Security Code, Section 5-9-521, shall be approved by the Chief of Police. Said plan shall be incorporated into the plan set approved for building permits (Standard Condition 3.20).</p> <p>PPP 10-7 Prior to approval of the first certificate of occupancy, the project applicant shall demonstrate to the City's Police Department that an Opticom traffic light control system has been installed at all signalized intersections servicing or adjacent to the Proposed Project Site (Condition of Approval).</p> <p>PPP 10-8 The project applicant shall implement the concepts of Crime Prevention Through Environmental Design in the design and layout of individual development projects within the Proposed Project Site to reduce criminal opportunity and calls for police service. Implementation of these concepts shall be verified by the City's Police Department during the development review process (Condition of Approval).</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant

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<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
SCHOOL SERVICES			
5.10-3 The 2012 Modified Project would generate new students and impact the school enrollment capacities of area schools as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies PPP 10-9 Pursuant to California Government Code Section 65995, the individual applicants shall pay developer fees to the appropriate school districts at the time building permits are issued; payment of the adopted fees would provide full and complete mitigation of school impacts. Alternatively, the applicant may enter into a school finance agreement with the school district(s) to address mitigation to school impacts in lieu of payment of developer fees. The agreement shall establish financing mechanisms for funding facilities to serve the students from the project. If the applicant and the affected school district(s) do not reach a mutually satisfying agreement, then project impacts would be subject to developer fees.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant
LIBRARY SERVICES			
5.10-4 Development of the 2012 Modified Project would cause increased demand for library services as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies PPP 10-10 In the event that a city-wide library impact fee is adopted and in force, the developer shall pay this fee prior to issuance of building permits for new development. Since a 39,000 square foot library facility is approved for development within Existing PA 51, this would satisfy payment of a library impact fee, if adopted by the City at a future date.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR</p>	Less than significant	Less than significant

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	No mitigation measures were identified in the 2011 Certified EIR.		
	Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.		
5.11 RECREATION			
5.11-1 The 2012 Modified Project would result in an increase in population on the Proposed Project Site as compared to the 2011 Approved Project, and therefore would increase the use of existing park and recreation facilities.	Plans, Programs, and Policies There are no PPPs that apply to this impact. Project Design Features There are no PDFs of the 2012 Modified Project that apply. Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR. Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.	Less than significant	Less than significant
5.11-2 The 2012 Modified Project would involve development and/or dedication of parkland in accordance with the ARDA. The impact of such development is analyzed throughout Chapter 5 of this DSSIER.	Plans, Programs, and Policies There are no PPPs that apply to this impact. Project Design Features There are no PDFs of the 2012 Modified Project that apply. Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR. Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.	Less than significant	Less than significant
5.12 TRANSPORTATION AND TRAFFIC			
5.12-1 The 2012 Modified Project would result in significant impacts at a number of intersections for the Year 2015, Year 2030 and Post-2030 scenarios, as compared to the 2011 Approved Project.	Plans, Programs, and Policies There are no PPPs that apply to this impact. Project Design Features PDF 12-1 The 2012 Modified Project's optional conversion of non-residential square footage to residential units, if implemented, will be subject to a	Significant	Significant and unavoidable For the 2011 Approved Project, the 2011 Certified EIR concluded that all intersections and roadway/freeway/tollway/ramp

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	<p>traffic analysis to assess traffic impacts, if any, due to the change in land use and will include a reduction in allowable Multi-Use intensity in terms of equivalent traffic generation (excluding DB units) based on AM peak, PM peak, and ADT. Conversions to other non-residential uses within the Multi-Use category, if implemented, will also be subject to a traffic analysis to assess traffic impacts, if any, and shall be reflected in terms of equivalent traffic generation based on AM peak, PM peak, and ADT.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR The following mitigation measures were included in the 2011 Certified EIR. These mitigation measures are also included in the 2012 Modified Project, and additional mitigation measures have been added for the purposes of this DSSEIR. This DSSEIR proposes to make certain modifications to the mitigation measures adopted by the City for the Approved Project. In addition, the language of TRAN 1 from the Certified EIR is proposed to be modified as indicated below. Modifications to the original mitigation measure are identified in strikeout text to indicate deletions and <u>underlined text</u> to signify additions.</p> <p>TRAN1 was modified by the City and approved as shown with 2nd AVTTM 17008 (PC Resolution 11-3109). References to Existing Planning Area 30 are proposed to be removed since the 2012 Modified Project's proposed GPA/ZC consolidates Existing PAs 30 and 51 into one PA to be designated Combined PA 51.</p> <p>TRAN1 Prior to the approval of any final map <u>of a subsequent subdivision map</u> (other than a financing and conveyance map) allocating for any land use, excluding single family land uses (single family land use includes single family detached and single family attached projects), parks, schools, daycare, and religious institutions, that allocates building intensity within Planning Areas 30 and 51, and prior to issuances of any building permits for permanent improvements within Planning Areas 30 and 51, the landowner or subsequent project applicant shall either (i) apply for annexation of any areas within the final map to the Irvine Spectrum Transportation Management Association (TMA) ("Spectrumotion") in accordance with Article X</p>		<p>segments would operate at acceptable levels of service with the existing, non-existing, or planned improvements. However, the traffic analysis assumed that the cumulative impact of the 2011 Approved Project traffic along with other regional growth at the identified ramp and freeway locations would be mitigated through a combination of regional programs that are the responsibility of other agencies. Therefore, the 2011 Certified EIR concluded that cumulative freeway/tollway ramp impacts would remain significant and unavoidable if these programs are not implemented by the agencies with the responsibility to do so.</p> <p>Traffic impacts of the 2012 Modified Project have been identified by analyzing the study area circulation system based on existing traffic conditions and Years 2015, 2030 and Post-2030 future traffic conditions. In some cases, new project impacts that were not mitigated by improvements identified in the</p>

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	<p>of the recorded Declaration of Covenants, Conditions and Restrictions (CC&Rs) for the Irvine Spectrum TMA, including any supplementary or amended CC&Rs, to reduce traffic, air quality and noise impacts or (ii) develop and implement a similar transportation management plan containing the elements and meeting the criteria described below as approved by the Director of Public Works. <u>The transportation management plan shall be implemented via payment of assessment dues to an organization similar to Spectrumotion for all land uses, with the exceptions noted above. While affordable housing units will be included, their assessment fees will be covered by other remaining adjacent land uses. The implementation (payment of assessment dues) for either option described above shall occur prior to issuance of building permit(s):</u></p> <p>Transportation Management Plan (TMP)</p> <p>The development and implementation of a Transportation Management Plan is an identified mitigation measure to manage transportation access for Planning Areas 30 and 51. This document summarizes the key elements of the TMP.</p> <p>A. Introduction</p> <p>The purpose of this document is to provide an outline for a comprehensive TMP for the Planning Areas 30 and 51 (“Great Park TMP”). This report is not intended to provide the specific details of the plan, but rather to highlight the key components and provide direction for subsequent detailed planning and implementation activities. When preparation of the TMP is undertaken, all of the agency and stakeholders will be invited to provide input.</p> <p>The applicant may elect to annex Combined PA 51 and a portion of Planning Area 30 into the Irvine Spectrum Transportation Management Association (Spectrumotion). Spectrumotion is a private, non-profit Transportation Management Association (TMA) formed to reduce traffic congestion in Irvine Spectrum.</p>		<p>North Irvine Transportation Mitigation (NITM) Program have been identified for 2012 Modified Project development scenarios. Recommended additional mitigation measures for each impacted location are presented in tables (see TRAN-5 through TRAN-12) . If there are intersections where identified improvements may not be feasible due to cost, right-of-way concerns, or community opposition, traffic impacts would remain significant and unavoidable. In addition, as with the 2011 Approved Project, certain impacts are assumed to be mitigated through a combination of regional programs that are the responsibility of other agencies. If those measures are not implemented for reasons outside the City’s control, certain traffic impacts of the 2012 Modified Project would remain significant and unavoidable.</p>

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	<p>Spectrumotion promotes, markets, and subsidizes alternatives to solo-commuting and assists the business community in complying with trip reduction related requirements. Membership is mandatory to property owners with deed restrictions requiring participation in the TMA. Membership dues provide the funding for the Association and its programs, which offer a variety of employer and commuter services focused on reducing vehicular trip generation.</p> <p>In the event that the applicant elects not to annex into Spectrumotion, a TMP similar to that provided by Spectrumotion will be developed and implemented. This document sets forth the components of the TMP should it be necessary.</p> <p>B. Transportation Management Plan Framework</p> <p>The key elements of the Great Park TMP are set forth below:</p> <p>New Hire Orientation: Inform newly hired employees of commuting services available to them.</p> <p>Public Transportation Pass Sales: Provide a central location for purchase of passes to available transit services ((i.e., OCTA buses, Metrolink, Amtrak, etc.).</p> <p>Vanpool and Carpool Formation Assistance: Perform all of the administrative work necessary to establish van pools and car pools.</p> <p>On-site Promotions: Hold rideshare promotions at work sites and assist in employer assistance promotions.</p> <p>Telecommuting/Alternative Work Schedule Consulting: Assist employers in developing and implementing a telecommuting or alternative work schedule program.</p> <p>Personalized Commute Consulting: Provide a personalized commute</p>		

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	<p>profile to any commuter, which includes carpool match list containing the names of other commuters in the North Irvine Sphere that live and work near each other.</p> <p>Website: Maintain a website with all of their program information available.</p> <p>Rideshare Promotions: Conduct high visibility rideshare promotions as a means to advertise its services.</p> <p>Subsidies: To the extent financially feasible, offer subsidies to assist in the formation of vanpools, the formation of carpools, and to encourage the trying of transit services.</p> <p>Public Agency Coordination: Work closely with various public and quasi-public agencies to improve bus and commuter rail service to the Spectrum and North Irvine Sphere areas.</p> <p>C. Transportation Management Plan Implementation</p> <p>As part of the TMP, a process will be established to monitor its effectiveness in reducing peak hour trip generation in the Combined PA 30 and 51. Provision shall be made for the Plan to be modified as appropriate to enhance its effectiveness.</p> <p>TRAN-2 Following adoption of a land use plan and circulation plan for the Great Park property and before the issuance of any building permits within the base property, the City of Irvine shall request a cooperative study with OCTA and other affected jurisdictions to amend the Orange County Master Plan of Arterial Highways (MPAH). Marine Way, Trabuco Road from the SR-133 toll way to "O" Street (formerly College Road), and Ridge Valley (formerly "Y" Street) should be included on the MPAH.</p> <p>TRAN-3 Prior to issuance of the first building permit for dwelling units or non-</p>		

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	<p>residential square footage, a Fee Reallocation Study shall be completed to recalculate the NITM Fees reflecting any fair share allocation modifications. The landowner or subsequent property owner shall submit the Fee Reallocation Study under a separate cover to be approved by the Director of Public Works, in consultation with the NITM Advisory Committee.</p> <p>TRAN-4 Prior to approval of the last final map for the 2011 Approved Project (or any portion thereof in the event that the final map is approved in multiple phases), the landowner or subsequent property owner shall pay its fair share of the costs of the following mitigation in an amount to be mutually agreed upon between the landowner or subsequent property owner and the City and reflective of the costs of the mitigation at the time of payment:</p> <ul style="list-style-type: none"> • 286 Jeffrey Road & Roosevelt: Restripe the existing eastbound approach to provide a shared through/ right turn lane within the existing right-of-way. • 361 Bake Parkway & Portola Parkway: Restripe the existing northbound approach to provide a shared through/left lane (which currently exists as a through lane) within the existing right-of-way and modify the existing traffic signal operation for a north/south split phase signal operation. Alternatively, restripe the existing northbound approach to provide dual left turn lanes in combination with a single through lane and single right turn lane within the existing right-of-way, and modify signal operation to include northbound right turn overlap phase. • 374 Lake Forest & Portola Parkway (Pending Projects analysis impact): Convert the existing northbound approach from de-facto right-turn to a dedicated right-turn, and modify the existing traffic signal operation to include right turn overlap phase. <p>Additional Mitigation Measures for the 2012 Modified Project</p>		

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	<p>TRANS (For specific Project-related non-NITM improvements): In conjunction with the submittal of any tentative tract maps/tentative parcel maps for the Project within Combined PA 51, the landowner or subsequent project applicant shall prepare, subject to review and approval of the City, the required tentative tract map/tentative parcel map (TTM/TPM) level traffic study per City Resolution No. 03-61. This traffic study will verify whether the intersection locations listed below, which have been identified as impacted in this SSEIR, are projected to be impacted by the subject project of the Interim Year Analysis. For those intersections impacted by subject project of the TTM/TPM traffic study, the tentative tract map/tentative parcel map will be conditioned to construct the necessary improvements that have been identified in the TTM/TPM traffic study. For those intersections listed below, which are not projected to be impacted by the subject project of the TTM/TPM traffic study, and prior to approval of the last final map for the 2012 Modified Project (or any portion thereof in the event that the final map is approved in multiple phases), the land owner or subsequent property owner shall construct, pay fair share of the costs or enter into an agreement with the City to establish the mechanism in which the funds generated by the mitigations shall be provided and utilized by Caltrans, City of Lake Forest, City of Tustin and/or City of Irvine toward implementing the improvements.</p> <ul style="list-style-type: none"> 16. Newport & Irvine – Modification of signal to provide a northbound right turn overlap phase. (2030, Option 2) Improvement no longer needed if Pending projects are approved. 54. Browning & Irvine – Application of ATMS, subject to approval by City of Tustin. (2030, Options 1 & 2) 221. Culver & Bryan – Addition of a westbound defacto right turn lane. (2030, Option 2) Improvement no longer needed if Pending projects are approved. 		

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<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
	<ul style="list-style-type: none"> 286. Jeffrey & Roosevelt – Conversion of the eastbound shared through/right lane into a through lane and addition of a second right turn lane. (Post-2030, Options 1 & 2) 290. Jeffrey & Barranca – Application of PA9C-identified ATMS. (2030, Options 1 & 2) 291. Jeffrey & Alton – Provision of an eastbound standard right-turn lane with right-turn overlap resulting in an ultimate eastbound lane configuration of 2 left-turn lanes, 2 through lanes, and 1 right-turn lane. (Post-2030, Options 1 & 2) 303. Sand Canyon & I-5 NB ramp/Marine Way – Conversion of the northbound defacto right turn lane to a standard right turn lane with right turn overlap signal operation. (2030, Options 1 & 2) 306. Sand Canyon & Oak Canyon - Fair Share contribution towards – conversion of the westbound shared through/right lane to a single through lane and conversion of the westbound right-turn lane into a free-right turn lane, as identified in the PA40/12 GPA/ZC. (2030, Options 1 & 2) Improvement no longer needed if Pending projects are approved. 321. Laguna Canyon & Old Laguna Canyon – Application of ATMS, subject to approval by the Director of Public Works. Alternate improvement is the addition of a fourth northbound through lane. (Post-2030, Options 1 & 2) Improvement no longer needed if Pending projects are approved. 366. Bake & Rockfield – Fully funded LFTM improvement: Conversion of a westbound through lane to a third left turn lane. 		

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	<p>(2030, Options 1 & 2)</p> <p>TRAN6 (For specific Project-related NITM improvements): The NITM Program provides a funding mechanism for the coordinated and phased installation of required traffic and transportation improvements established in connection with land use entitlements for City of Irvine Planning Areas 1, 5, 6, 8, 9, 40 and 51. As established by City Ordinance No. 03-20, Combined PA 51 is included in this program and, as such, is required to pay its fair share towards the List of NITM Improvements included within the established NITM Program. The following Project impacted locations are included in the NITM List of Improvements and thus, payment of NITM fees will mitigate the Combined PA 51 project's fair share responsibility towards these improvements:</p> <ul style="list-style-type: none"> • 228. Culver & Barranca – Conversion of the westbound defacto right-turn lane to a through lane. (2030, Options 1 & 2) • 424. Los Alisos & Rockfield – Addition of a southbound right turn lane. (2030, Option 1) Improvement no longer needed if Pending projects are approved. • I-5 Northbound Off-ramp to Jamboree – Addition of a second drop lane from the I-5 to the Jamboree off-ramp. (2030, Option 1) <p>TRAN7 (If pending projects are approved, Project-related non-NITM improvements): In the event that all of the pending (not approved) projects analyzed are approved and in conjunction with the submittal of any tentative tract maps/tentative parcel maps for the Project within Combined PA 51, the landowner or subsequent project applicant shall prepare, subject to review and approval of the City, the required tentative tract map/tentative parcel map (TTM/TPM) level traffic study per City Resolution No. 03-61. This traffic study will verify whether the intersection locations listed below, which have been identified as</p>		

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	<p>impacted in this SSEIR, are projected to be impacted by the subject project of the Interim Year Analysis. For those intersections impacted by subject project of the TTM/TPM traffic study, the tentative tract map/tentative parcel map will be conditioned to construct the necessary improvements that have been identified in the TTM/TPM traffic study. For those intersections listed below, which are not projected to be impacted by the subject project of the TTM/TPM traffic study, and prior to approval of the last final map for the 2012 Modified Project (or any portion thereof in the event that the final map is approved in multiple phases), the land owner or subsequent property owner shall construct, pay fair share of the costs or enter into an agreement with the City to establish the mechanism in which the funds generated by the mitigations shall be provided and utilized by Caltrans, City of Lake Forest, City of Tustin and/or City of Irvine toward implementing the improvements.</p> <ul style="list-style-type: none"> • 54. Browning & Irvine – Application of ATMS, subject to approval by City of Tustin. (2030, Options 1 & 2) • 286. Jeffrey & Roosevelt – Conversion of the eastbound shared through/right lane into a through lane and addition of a second right turn lane. (Post-2030, Options 1 & 2) • 290. Jeffrey & Barranca – Application of PA9C-identified ATMS. • 291. Jeffrey & Alton – Provision of an eastbound standard right-turn lane with right-turn overlap resulting in an ultimate eastbound lane configuration of 2 left-turn lanes, 2 through lanes, and 1 right-turn lane. (2030 & Post-2030, Options 1, Post-2030, Option 2) • 303. Sand Canyon & I-5 NB ramp/Marine Way – Conversion of the northbound defacto right turn lane to a standard right turn lane with 		

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	<p>right turn overlap signal operation. (2030, Options 1 & 2)</p> <ul style="list-style-type: none"> 366. Bake & Rockfield – Fully funded LFTM improvement: Conversion of a westbound through lane to a third left turn lane. (2030, Options 1 & 2) 417. El Toro & Portola – Fully funded LFTM improvement: Addition of a southbound right turn overlap phase. (2030, Options 1 & 2) 		
	<p>TRAN8 (If pending projects are approved, For specific Project-related NITM improvements): The NITM Program provides a funding mechanism for the coordinated and phased installation of required traffic and transportation improvements established in connection with land use entitlements for City of Irvine Planning Areas 1, 5, 6, 8, 9, 40 and 51. As established by City Ordinance No. 03-20, Combined PA 51 is included in this program and, as such, is required to pay its fair share towards the List of NITM Improvements included within the established NITM Program. In the event that all of the pending (not approved) projects analyzed are approved, the following Project impacted locations are included in the NITM List of Improvements and thus, payment of NITM fees will mitigate the Combined PA 51 project's fair share responsibility towards these improvements:</p> <ul style="list-style-type: none"> 228. Culver & Barranca – Conversion of the westbound defacto right-turn lane to a through lane. (2030, Options 1 & 2) I-5 NB Off-ramp to Jamboree – Addition of a second drop lane from the I-5 to the Jamboree off-ramp. (2030 & Post-2030, Option 1 & 2) 		
	<p>TRAN9 (Caltrans Fair Share): Prior to approval of the last final map for the 2012 Modified Project (or any portion thereof in the event that the final map is approved in multiple phases), the land owner or subsequent property owner shall make a good-faith effort to enter into a fair share</p>		

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	<p>agreement with Caltrans and the City of Irvine to establish its fair share allocation towards the future implementation of the following freeway facility improvements. It may not be possible to successfully negotiate the agreement with Caltrans. Fair share contribution shall be calculated using the same methodology for determining fair share contributions as included in the North Irvine Transportation Mitigation Program. The Agreement shall establish the mechanism in which the funds generated by the Project's fair share mitigations shall be provided and utilized by Caltrans and/or City of Irvine toward implementing the following improvements:</p> <ul style="list-style-type: none"> I-5 Northbound, north of Culver – Directional capacity enhancement equivalent to a single general purpose lane. (2030, Options 1 & 2) I-5 Northbound, north of Jeffrey – Directional capacity enhancement equivalent to a single general purpose lane. (2030, Options 1 & 2) Improvement no longer needed if Pending projects are approved. I-405 Northbound, north of Jeffrey – Directional capacity enhancement equivalent to a single general purpose lane. (2030 and Post-2030, Options 1 & 2) Improvement no longer needed if Pending projects are approved. <p>TRAN10 (If pending projects are approved, Caltrans Fair Share): In the event that all of the pending (not approved) projects analyzed are approved, and prior to approval of the last final map for the 2012 Modified Project (or any portion thereof in the event that the final map is approved in multiple phases), the land owner or subsequent property owner shall make a good-faith effort to enter into a fair share agreement with Caltrans and the City of Irvine to establish its fair share allocation towards the future implementation of the following freeway facility improvements. It may not be possible to successfully negotiate the agreement with Caltrans. Fair share contribution shall be calculated using the same methodology for</p>		

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	<p>determining fair share contributions as included in the North Irvine Transportation Mitigation Program. The Agreement shall establish the mechanism in which the funds generated by the Project's fair share mitigations shall be provided and utilized by Caltrans and/or City of Irvine toward implementing the following improvements:</p> <ul style="list-style-type: none"> • SR-133 northbound loop on-ramp at Barranca Parkway – Conversion of the HOV preferential lane to a second metered mixed-flow lane (2015, Option 2) • I-5 Northbound, north of Culver – Directional capacity enhancement equivalent to a single general purpose lane. (2030, Options 1 & 2) <p>TRAN11 (Rockfield MPAH Amendment) The City of Irvine shall submit a request to OCTA and other affected jurisdictions to amend the Orange County Master Plan of Arterial Highways (MPAH) to eliminate the extension of Rockfield Boulevard from the eastern project boundary to Marine Way.</p> <p>TRAN12 (If Rockfield MPAH Amendment not approved by OCTA) In the event that the Rockfield MPAH change does not occur and the Rockfield connection to Marine Way is ultimately constructed, and in addition to previously identified Post-2030 Option 1 improvements, the land owner or subsequent property owner shall enter into a fair share agreement with the City of Irvine and shall make a good-faith effort to enter into a fair share agreement with Caltrans to establish its fair share allocation towards the future implementation of the conversion of the HOV preferential lane at the SR-133 northbound loop on-ramp at Barranca Parkway to a second metered mixed-flow lane. It may not be possible to successfully negotiate the agreement with Caltrans. The fair share contribution shall be calculated using the same methodology for determining fair share contributions as included in the North Irvine Transportation Mitigation Program. The Agreement shall establish the mechanism in which the</p>		

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	funds generated by the Project's fair share mitigations shall be provided and utilized by Caltrans and/or City of Irvine. For Option 2, the mitigations as indicated in TRAN5 through TRAN10 remain unchanged in the event that the Rockfield MPAH change does not occur and the Rockfield connection to Marine Way is ultimately constructed.		
5.12-2: Like the 2011 Approved Project, the 2012 Modified Project complies with adopted policies, plans, and programs for alternative transportation.	<p>Plans, Programs, and Policies There are no PPPs that apply to this impact.</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant
5.12 UTILITIES AND SERVICE SYSTEMS			
WATER SERVICES			
5.13.1-1 Existing and planned IRWD water supplies and delivery systems are adequate to meet the 2012 Modified Project's forecasted water demand as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies PPP 13-1 Requirement to Use Recycled Water: Irvine Ranch Water District (IRWD) will identify areas within the Sub Area Master Plan that are capable of receiving service from the IRWD's recycled water system, and will determine the feasibility of providing recycled water service to these areas. IRWD will also review applications for new permits to determine the feasibility of providing recycled water service to these applicants. If recycled water service is determined by IRWD to be feasible, applicants for new water service shall be required to install on-site facilities to accommodate both potable water and recycled water service in accordance with IRWD's Rules and Regulations.</p>	Less than significant	Less than significant

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	<p>PPP 13-2 Connection Fees: The Project Applicant shall enter into agreement or agreements as necessary with IRWD to establish the appropriate financial fair share costs to be borne by the project proponent. Fair share costs may include, but are not limited to, those associated with the preparation of studies necessary to analyze the needs of the 2012 Modified Project and infrastructure expansion necessary to serve the 2012 Modified Project.</p> <p>PPP 13-3 Fire Flow Analysis: In accordance with IRWD requirements, each tentative tract map in the 2012 Modified Project must provide a fire flow analysis. If the analysis identifies any deficiencies, the developer will be responsible for any water system improvements associated with the development project required to rectify the deficiencies and meet IRWD fire flow requirements.</p> <p>Project Design Features PDFs 4-3, 4-4, and 4-5 apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		
WASTEWATER			
5.13.2-1 IRWD has adequate wastewater treatment capacity to meet the 2012 Modified Project's estimated wastewater generation, and project development would not require construction of new or expanded wastewater treatment facilities as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies PPP 13-2 applies.</p> <p>Project Design Features PDF 4-3 applies.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant

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5.13.2-2 The 2012 Modified Project's development would not require expansion and extensions of existing IRWD sewers as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies PPP 13-2 applies.</p> <p>Project Design Features PDF 4-3 applies.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR No mitigation measures were identified in the 2011 Certified EIR.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>	Less than significant	Less than significant
SOLID WASTE			
5.13 Like the 2011 Approved Project, there is sufficient landfill capacity in the region for 2012 Modified Project-generated solid waste.	<p>Plans, Programs, and Policies PPP 13-4 The City Construction and Demolition (C&D) Debris Recycling and Reuse ordinance requires that 1) all residential projects of more than one unit, 2) nonresidential developments on 5,000 square feet or larger, and 3) nonresidential demolition/renovations with more than 10,000 square feet of building recycle or reuse a minimum of 75 percent of concrete and asphalt and 50 percent of nonhazardous debris generated.</p> <p>PPP 13-5 The City adopted a Zero Waste program in 2007 to approach waste management. The City recovers approximately 66 percent of its waste for recycling and composting, which exceeds the state's AB 939 waste diversion goals. Furthermore, waste haulers establish rate schedules according to bin size and frequency of collection. Commercial customers that subscribe to smaller bins (e.g., 2 cubic-yard bins) are routinely charged less by haulers. This pricing structure encourages waste reduction and recycling, and tends to minimize hauler pickups.</p> <p>PPP 13-6 The Irvine Sustainable Community Initiative (Initiative Ordinance 10-11), adopted by the voters of the City as Initiative Measure S on November 2, 2010, and certified by the City Council on December 14, 2010, became effective December 24, 2010. The ordinance was adopted to ratify and implement policies in support of renewable energy and environmental</p>	Less than significant	Less than significant

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	<p>programs for a sustainable community. It outlines the City's direction for continuing to develop and implement programs geared towards green building, renewable energy and sustainability. For example, the City would continue to develop and implement recycling, zero waste or other innovative onsite business programs to divert waste from landfills and also continue to develop and implement the use of native, California-friendly and drought-tolerant landscaping.</p> <p>PPP 13-7 Prior to the issuance of grading permits for a project that involves the demolition of an asphalt or concrete parking lot on site, the applicant shall submit a waste management plan demonstrating compliance with the requirements of Title 6, Division 7 of the City of Irvine Municipal Code relating to recycling and diversion of demolition waste as applicable to said project. Over the course of demolition or construction, the applicant shall ensure compliance with all code requirements related to the use of City-authorized waste haulers (Standard Condition 2.24).</p> <p>PPP 13-8 Prior to the issuance of building permits for a project that involves new construction or that involves the demolition or renovation of existing buildings on site, the applicant shall comply with requirements of Title 6, Division 7 of the City of Irvine Municipal Code relating to recycling and diversion of construction and demolition waste as applicable to said project. Over the course of demolition or construction, the applicant shall ensure compliance with all code requirements related to the use of City-authorized waste haulers (Standard Condition 3.7).</p> <p>Project Design Features There are no PDFs of the 2012 Modified Project that apply.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR SW-1 It is anticipated that much of the solid waste resulting from the demolition, dismantling, or other deconstruction of the aged structures and property, including but not limited to buildings and runways, at MCAS El Toro is contaminated with lead-based paints, asbestos, or other materials that may</p>		

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	<p>render it unsuitable for recycling or reuse. At the sole cost and expense of the project applicant, in order to evaluate this condition and determine the feasibility of recycling of solid waste material from the MCAS El Toro site by ordinary means, a technical evaluation by a qualified environmental consultant must be conducted. The technical evaluation shall include sufficient sample testing of all types of solid waste materials to be generated by the project to analyze its composition. A copy of the full technical evaluation and its findings must be submitted to the City of Irvine Community Development Department. The City of Irvine must confirm the adequacy of the technical evaluation prior to authorizing the demolition, dismantling, or deconstruction project to proceed. If it is determined by the technical evaluation that material is contaminated and prohibited from being recycled by ordinary means, a further evaluation must be conducted to identify and evaluate other feasible methods approved by state law to divert the material from landfills. This may include the delivery of the waste material to other appropriate non-disposal or transformation facilities, such as “waste-to-energy” (WTE) plants.</p> <p>SW-2 For that solid waste which is determined to be inappropriate for recycling (as that term is defined by California Public Resources Code Section 40180), the project applicant must submit a written plan to the City and implement such plan to ensure that 75% of the material, or the maximum amount feasible as determined by the technical evaluation, is diverted from the landfill through other methods that comply with state statutes and regulations.</p> <p>SW-3 For that solid waste which the technical study deems to be suitable for recycling, the project applicant must submit a written plan to the City and implement such plan to ensure that solid waste material generated by the demolition, dismantling, or deconstruction project, land use operations and maintenance is collected by a City authorized solid waste hauler or recycling agent, and that a minimum of 75% of the solid waste from the project is diverted from landfills by recycling, as that term is defined by California Public Resources Code Section 40180 (“Recycling” does not</p>		

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	<p>include transformation, as defined in Public Resources Code Section 40201).</p> <p>SW-4 To ensure ongoing compliance with these mitigation measures, the project applicant will be required to submit solid waste tonnage reports to the City of Irvine on City approved forms, accompanied by “weight ticket” receipts from state-certified disposal, nondisposal, or transformation facilities, on a quarterly basis to demonstrate that solid waste diversion has occurred in accordance with these required mitigation measures and in a manner that is consistent with, and not detrimental to, the efforts of the City of Irvine to comply with AB939.</p> <p>To assure compliance with applicable statutes related to the disposal of solid waste, it is necessary for the City to require appropriate and effective mitigation measures to limit the disposal and ensure significant recycling of solid waste on-site.</p> <p>SW-5 For green waste, the project applicant must submit a written plan to the City and implement such plan to ensure that the green waste material generated by landscape maintenance operations is collected by a City authorized waste hauler or recycling agent, that the maximum feasible amount of that collected green waste is recycled, and that a minimum of 50% of the green waste from the project is diverted from landfills by recycling, as that term is defined by California Public Resources Code Section 40180.</p> <p>Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.</p>		
<i>ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATIONS</i>			
5.13-4 Existing and/or proposed electricity, natural gas, and telecommunications facilities would be able to accommodate 2012 Modified Project-generated utility demands as compared to the 2011 Approved Project.	<p>Plans, Programs, and Policies PPPs 4-3, 4-4, and 4-5 apply.</p> <p>Project Design Features PDF 4-7 applies.</p> <p>Applicable Mitigation Measures from the 2011 Certified EIR</p>	Less than significant	Less than significant

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	No mitigation measures were identified in the 2011 Certified EIR.		
	Additional Mitigation Measures for the 2012 Modified Project No additional mitigation measures are required.		

ADDITIONAL MITIGATION MEASURES FROM THE 2011 CERTIFIED EIR AND ASSOCIATED MMRP

The following mitigation measures that were adopted in the MMRP for the 2011 Approved Project are not included above, however, they are incorporated into the 2012 Modified Project. PPPs 13-1 and 13-2 have also been incorporated into the 2012 Modified Project.

Soils and Geology

	<p>GS-1 Prior to issuance of a building permit, the City of Irvine shall require that all development be designed in accordance with the seismic design provisions outlined in future proposed development geotechnical reports and specified in the latest Building Codes adopted by the City of Irvine. Compliance with this measure shall be verified by the Community Development Department.</p> <p>GS-2 Prior to issuance of a building permit, as per existing City policies, geotechnical studies shall be prepared at the time specific development projects are proposed to address site specific geotechnical considerations. The scope of each geotechnical study is based on the underlying geotechnical conditions of the individual site. These reports will provide measures to prevent settlement.</p> <ol style="list-style-type: none"> 1. Prior to design and construction of any future developments within the project area, a comprehensive geotechnical evaluation, including development-specific subsurface exploration and laboratory testing, shall be conducted. The purpose of the subsurface evaluation is to: <ol style="list-style-type: none"> a. Further evaluate the subsurface conditions in the area of the proposed structures. b. Provide specific data on potential geologic and geotechnical hazards. c. Provide information pertaining to the engineering characteristics of earth materials in the project area. <p>From this data, recommendations for grading/earthwork, surface, and</p>		
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	<p>subsurface drainage, temporary and/or permanent dewatering, foundations, pavement structural sections, and other pertinent geotechnical design considerations may be formulated and shall be included in the grading and building plans for individual developments. General recommendations are as follows:</p> <ul style="list-style-type: none"> • Seismic Ground Shaking - Measures to prevent risk of loss, injury or death involving seismic ground shaking include constructing new development to the latest adopted building codes. In addition, new development should not be located near active earthquake faults. • Erosion or Loss of Topsoil – Erosion and sediment control measures shall be implemented as required by the City’s Grading and Water Quality ordinances. • Where Expansive Soils Exist – Measures for the design of foundations, slabs, flatwork and other improvements subject to drainage from expansive soils. <p>Compliance with this measure shall be verified by the Community Development Department.</p>		
	<p>GS-3 Prior to issuance of building permits for the occupancy of any existing structure at the former MCAS El Toro, or occupancy of any existing structure if a building permit is not issued, a seismic evaluation of the structure including recommendations for seismic improvements required for compliance with current Building Codes for use of existing structures adopted by the City of Irvine and plans for any required seismic improvements shall be submitted to the Chief Building Official for review and approval.</p>		
	<p>GS-4 Prior to issuance of a grading permit, detailed geotechnical and hydrology reports shall be prepared prior to any development approval or grading activities. These reports shall specifically address erosion control and surface runoff for both construction and long-term operations on the site. Recommendations contained in these reports to prevent soil erosion, siltation, and debris influx into the drainage system shall be implemented.</p>		

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	Compliance with this measure shall be verified by the Community Development Department.		
Biological Resources			
	<p>PPP 13-1 All construction activities shall comply with the federal Migratory Bird Treaty Act of 1918 (MBTA). The MBTA governs the taking and killing of migratory birds, their eggs, parts, and nests and prohibits the take of any migratory bird, their eggs, parts, and nests. Compliance with the MBTA shall be accomplished by the following:</p> <ul style="list-style-type: none"> • If vegetation is to be cleared during the nesting season (March 1 to September 1), all suitable habitat shall be thoroughly surveyed for the presence of nesting birds by a qualified Biologist no more than 72 hours prior to clearing. The survey results shall be submitted by the Property Owner/Developer to the Director of Community Development. • If any active nests are detected, the area shall be flagged and mapped on the construction plans along with a buffer distance to be determined by the qualified Biologist. The buffer area shall be avoided until the nesting cycle is complete or until the Biologist has determined that the nest has failed. In addition, the Biologist shall be present on the site to monitor the vegetation removal to ensure that any nests that were not detected during the initial survey are not disturbed. <p>PPP 13-2 All construction activities shall comply with Sections 3503, 3503.5 and 3513 of the California Fish and Game Code, which protect active nests of any raptor species, including common raptor species. Compliance with these codes shall be accomplished by the following:</p> <ul style="list-style-type: none"> • If vegetation is to be cleared during the raptor nesting season (February 1 to June 30), all suitable habitat within 300 feet of the Project sites shall be thoroughly surveyed for the presence of nesting raptors (including burrowing owl) by a qualified Biologist 72 hours 		

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<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
	<p>prior to clearing. The survey results shall be submitted by the Property Owner/Developer to the Director of Community Development and the California Department of Fish and Game.</p> <ul style="list-style-type: none"> If any active nests are detected, the area shall be flagged and mapped on the construction plans along with a minimum 300-foot buffer, with the final buffer distance to be determined by the qualified Biologist. The buffer area shall be avoided until the nesting cycle is complete or until it is determined that the nest has failed. In addition, the Biologist will be present on the site to monitor the vegetation removal. 		
	<p>PDF 10-2 Appropriate edge effect characteristics (e.g. earthen berms, vegetative or other barriers) will be implemented as necessary along the edges of the Relocated Wildlife Corridor Feature in order to reduce visibility and human access into the corridor, and to reduce light spillage and ambient noise within the corridor.</p>		
	<p>BIO-1 Prior to approval of a subdivision map for each project area, a focused survey for the southern tarplant, mountain plover, and burrowing owl shall be conducted. Prior to approval of a subdivision map for development within, or in proximity to Serrano Creek, a focused survey shall be conducted for the least Bell's vireo and southwestern willow flycatcher. Should the focused survey identify a significant population of southern tarplant or mountain plover, or the presence of burrowing owls, least Bell's vireo, or southwestern willow flycatcher in an area proposed for development, impacts shall be avoided through incorporation of the species into an open space easement or if impacts cannot be avoided, then mitigation shall be negotiated through consultation with the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG).</p>		
	<p>BIO-2 Prior to approval of a subdivision map for each project area, a wetland delineation shall be performed for all areas within the master plan sub-area that contain the potential for wetland habitat and/or jurisdictional waters.</p>		

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*Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation*

<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
	<p>The loss of impacted wetlands shall be mitigated through the implementation of a wetland mitigation plan prepared and accepted by the appropriate agency (i.e., U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game). Wetlands impacted on-site shall be mitigated through on-site or off-site replacement, re-creation (i.e. within the proposed wildlife corridor), and/or revegetation as deemed acceptable by the appropriate jurisdictional agencies.</p> <p>BIO-3 The City shall continue to work with State and federal agencies during the implementation of the proposed project to implement the revegetation/restoration plan for the wildlife corridor. Measures such as sight and sound barriers, including artificial sound walls and natural diversions (e.g. hedges and tree lines) shall be incorporated into corridor design to ensure the viability of the corridor. The City shall implement the corridor consistent with the design criteria and viability analysis established in the OCGP FEIR.</p> <p>BIO-4 Prior to issuance of a grading permit for each project area, a complete inventory of all trees of trunk diameter at breast height (DBH) greater than six inches and any significant (as determined by a certified arborist selected by the City) plants on the project site, excluding those within the habitat preserve shall be prepared. This inventory shall be prepared by an arborist certified by the International Society of Arboriculture and shall include (but not be limited to) data for each tree such as species, variety, DBH, condition (excellent, good, fair, poor, dead), and any recommendations. All trees in this inventory shall be considered "Significant Trees" under the City of Irvine's Urban Forestry Ordinance (UFO) (Section 5-7-401 et al) and the UFO shall apply to all trees included in this inventory.</p>		

1. Executive Summary

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Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
Paleontological Resources			
	<p>P-1 Prior to issuance of a grading permit for any portion of the project area, a qualified paleontologist shall be retained by the City or designee to carry out an appropriate paleontology investigation of the area proposed for grading. (A qualified paleontologist is defined as an individual with an M.S. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques.) The City of Irvine has standard conditions applied prior to the issuance of grading permits when a project site includes potentially significant paleontological sites, and paleontological monitoring conditions have not been attached to the previous map approval. These standard conditions include retaining a qualified paleontologist, establishing procedures for cultural and scientific resource surveillance, and protection of any resources discovered during the grading process.</p> <p>When fossils are discovered, the paleontologist (or paleontological monitor) shall recover them. In most cases, this fossil salvage can be completed in a short period of time. However, some fossils specimens (such as a complete large mammal skeleton) may require an extended salvage period. In these instances the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovery of small fossil remains, such as isolated mammal teeth, it may be necessary in certain instances to set up a screen-washing operation on-site.</p> <p>Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged. Compliance with this measure shall be verified by the Community Development Department.</p>		

1. Executive Summary

Table 1-1

Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
Cultural Resources			
	<p>CULT-1 Prior to subdivision for development, a detailed archaeological report(s) shall be prepared within PAs 51 and 30. This report(s) shall specifically address the potential for encountering archaeological resources at the time specific development is proposed. The report(s) shall provide recommendations to prevent degradation of archaeological resources such as site avoidance and data recovery. Recommendations contained in the report shall be implemented. Compliance with this measure shall be verified by the Community Development Department.</p> <p>CULT-2 Monitoring of excavation and grading activities associated with future development in PAs 51 and 30 shall be conducted by a certified archaeologist in accordance with the report required in Mitigation Measure Cult1. If resources are encountered in the course of ground disturbance, the archaeological monitor shall be empowered to halt grading and to initiate an archaeological testing program. The testing shall include recordation of artifacts, controlled removal of the materials, and an assessment of their importance under CEQA and the City's local guidelines. Compliance with this measure shall be verified by the Community Development Department.</p> <p>CULT-3 Prior to the issuance of grading permits and/or building permits for any future development in PAs 51 and 30, a detailed mitigation program shall be submitted by the applicant to the City of Irvine to address archaeological resources discovered during grading. Provisions of the program shall include an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be a unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation shall be available. Work may continue on other parts of the construction site while archaeological resource mitigation takes place. The City of Irvine has standard conditions applied prior to the issuance of grading permits when a project site includes potentially significant archaeological sites. These include retaining a</p>		

1. Executive Summary

Table 1-1

Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

<i>Environmental Impact</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance Before Additional Mitigation</i>	<i>Level of Significance After Additional Mitigation</i>
	<p>qualified archaeologist, establishing procedures for cultural and scientific resource surveillance, and protection of any resources discovered during the grading process. Compliance with this measure shall be verified by the Community Development Department.</p> <p>CULT-4 Prior to the issuance of any grading and/or building permits, a mitigation program shall be submitted by the developer to the City of Irvine to address the accidental discovery or recognition of any human remains. The program shall include the following:</p> <ul style="list-style-type: none"> There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: <p>The county coroner must be contacted to determine that no investigation of the cause of death is required, and</p> <p>If the coroner determines the remains to be Native American:</p> <ul style="list-style-type: none"> The coroner shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriated dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a 		

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Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

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	<p>location not subject to further subsurface disturbance.</p> <ul style="list-style-type: none">• The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.• The descendant identified fails to make a recommendation; or• The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner. <p>Compliance with this measure shall be verified by the Community Development Department.</p>		

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