CITY OF IRVINE

CEQA MANUAL

Volume 2: Technical Guidelines

FINAL

May 2012

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1. Introduction

1.1 FRAMEWORK/PURPOSE OF THE CEQA GUIDELINES FOR IRVINE

Volume II of the Irvine California Environmental Quality Act (CEQA) Manual (Irvine CEQA Manual) contains the Irvine CEQA Guidelines. The City may modify these guidelines in the event of scientific discovery, changes in analysis methodologies or tools, alterations in factual data, or project-specific factors that may impact the applicability of a guideline.

1.1.1 Irvine CEQA Guidelines

The City is preparing CEQA guidelines to provide a consistent framework and reference from which to evaluate and mitigate environmental impacts of projects within the City. The City of Irvine CEQA Guidelines consolidates applicable City, regional, state and federal regulations, existing procedures, and policies that provide the basis for environmental review pursuant to CEQA. The Irvine CEQA Guidelines are designed to:

- Ensure the quality, accuracy, and completeness of environmental documents prepared by the City or its consultants, or submitted to the City for review.
- Provide a framework for consistent review of applicable projects for which the City is the lead agency.
- Establish a uniform consistent approach for the City's environmental review process.

1.1.2 How to Use Irvine's CEQA Guidelines

The Irvine CEQA Guidelines are divided into chapters based on the environmental topics in Appendix G of the State CEQA Guidelines. In each chapter, the Irvine CEQA Guidelines provide a list of the Initial Study checklist questions in Appendix G of the State CEQA Guidelines. In addition, additional checklist questions are incorporated, where applicable. In each chapter, the Irvine CEQA Guidelines provides additional guidance for evaluating impacts and their significance, including:

- General approach for environmental analysis
- Screening criteria (if applicable)[1]
- Methodology

[1] Screening criteria is a method of determining types of projects, size of projects, or characteristics of projects that clearly do not result in significant environmental impacts. A project that is less than or meets the screening criteria would be considered to have no impact or less than significant impact. Projects that exceed the screening criteria require a more detailed level of analysis in order to determine the level of significance. A project that exceeds the screening criteria could still be considered to have less than significant impacts if the more detailed analysis indicates that impacts are less than significant.

1. Introduction

The Irvine CEQA Guidelines are intended to give preparers of environmental documents a consistent logical progression of analysis, from background information, applicable regulations, sources of information, and significance guidelines to the potential impacts resulting from implementation of the project and potential mitigation measures. However, as each case has its own issues and needs, the format/content of the environmental analysis may need to be tailored to the unique circumstances associated with each project. Pursuant to Section 15064(b) of the State CEQA Guidelines:

> "The determination whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on factual and scientific data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

The Irvine CEQA Guidelines represent a compilation of existing information and practices and do not introduce new evaluation methods.

1.2 GENERAL APPROACH FOR ENVIRONMENTAL ANALYSIS

Once a proposed activity is determined by the City to be a "discretionary project" under CEQA, and not qualified for either a statutory or categorical exemption (see Chapter 2, *Environmental Review Process*), the environmental analysis process begins. That process, whether it leads to a Negative Declaration (ND), Mitigated Negative Declaration (MND), or Environmental Impact Report (EIR)[2], must involve a comprehensive and consistent approach to evaluating the potential impacts of a project.

The majority of CEQA documents in the City of Irvine follows the *tiering* style of analysis. Tiering refers to using the analysis of general matters contained in a broader EIR (such as a general plan EIR, program EIR, or master EIR) (State CEQA Guidelines Section 15152). In Irvine, a program EIR is prepared for a planning area which covers all the environmental impacts of the actions related to the development of the area. It does not need to go into detail of future projects when the details are not known. However, tiering does not excuse the lead agency form adequately analyzing reasonable foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration (State CEQA Guidelines Section 15152).

When smaller projects within the planning area are proposed, they may rely on the program EIR for broad analysis and only need to cover the environmental topics that would result in potentially significant impacts.

No matter what type of environmental document is prepared for a project, the general approach for determining impacts is the same. Below is a summary of the City's general approach to environmental analysis. Most of the topical chapters of this manual use this approach to describe how to determine significance. The flow chart "General Approach for Determining Significance" provides the six main steps for environmental analysis discussed in this manual. Because of their more technical approach, air quality, greenhouse gas emissions, noise, and transportation and traffic provide a more detailed discussion for determining significance based on significance criteria that have been adopted by the City and applicable reviewing agencies.

[2] May also include an Addendum, a Supplement to an EIR, or Supplemental EIR.

The factors that contribute to understanding the information needed for each step are detailed following the flow chart. Reference to this flow chart is made in each environmental topic chapter of this manual.

Step 1: Determine the Existing Conditions

The **onsite** and **surrounding** site conditions existing at the time of the publication of a notice of preparation (or, if no notice of preparation is published, at the time the environmental review is commenced) normally provide a baseline from which project impacts can be determined. To determine the existing site conditions, the following questions can be asked.

- What land uses are currently onsite?
- What are the surrounding land uses?
- What are the topography, vegetation type, and natural community compositions?
- What are the general plan land use and zoning designations?
- What is the existing population?

In addition to the above questions, the analysis for each environmental topical section should include a context specific analysis of existing environmental conditions. . For example, in the traffic section, existing traffic conditions should be considered. Existing peak hour traffic trips generated from the site and from the surrounding area should be identified. An inquiry would also be made into the existing levels of service on the circulation system in the vicinity of the site. Similar context-specific questions would be posed for each environmental topical section.

Step 2: Project Impacts

The project description should clearly lay out the components of all phases of the proposed project so that the following project impacts, if any, can be determined:

- Short-term (construction) and long-term (project use) impacts
- Physical and operational impacts
- Project-related and cumulative impacts

A description of project characteristics should be based on the following questions, among others:

- What are the proposed land uses?
- What would the size of the development be?
- What construction activities would be performed? Would there be grading? How long would construction last?
- How much vegetation would be removed?
- What are the building characteristics? Massing? Scale? Lighting?
- What would the hours of operation be?
- How many people (workers/residents) would be on the project site during operation?
- Are infrastructure improvements necessary (roadways, utilities, etc.)?

The City has adopted the initial study checklist questions contained in Appendix G to the State CEQA Guidelines as significance thresholds for each environmental category. Thresholds serve as the "measuring sticks" against which the significance of the project's environmental impacts will be determined.

Screening Criteria

The Irvine CEQA Manual presents quantitative and performance-based screening criteria adopted by the City of Irvine. Screening criteria are applicable for thresholds for environmental areas that require a quantitative or more technical approach to evaluating environmental effects, such as air quality, greenhouse gas, noise, and traffic sections.. The screening criteria provide assistance in responding to the City's initial study checklist questions and can help determine if further study is needed to determine whether a significant impact could potentially occur. CEQA screening criteria are not intended as a bright-line threshold[3] to indicate significant impacts; rather, they provide additional guidance to determine when impacts would not occur or are *de minimus* so that a detailed analysis is not necessary.[4] The significance criteria are based on a variety of factors, including existing City, state, and federal regulations and adopted policies.

Step 3: Apply Plans, Policies, and Programs

The City of Irvine lists the applicable plans, policies, and programs (PPPs) in each topical section of an EIR, usually preceding or at the start of the impact analysis section. The PPPs include local, state, and federal regulations, including the City's Standard Conditions of Approval. Because they are existing plans, policies, and programs, compliance with PPPs are assumed when assessing the potential impacts of the project. This assumption may lead to the conclusion that a project will have less than significant impacts.

Step 4: Determine Impact Significance

If it is determined that a project impact exceeds the significance criteria (with the PPPs assumed), then the impact is considered potentially significant. In some cases, an impact may not be significant if it is consistent with the general plan, the City's vision for the area, or other existing plans or guidelines for the project site. In the initial study, "no impacts" and "less than significant impacts" must be substantiated but these categories are not carried over for further analysis in the EIR. All "potentially significant impacts" must be discussed in the EIR. If there are no potentially significant impacts, a negative declaration, addendum, or CEQA Exemption may be prepared. When it is apparent that mitigation measures can reduce impacts to less then significant levels, a mitigated negative declaration is required. If all feasible mitigation measures were considered but would not reduce impacts to less than significant levels than an EIR is required. All significance conclusions must be substantiated in the analysis.

Step 5: Formulate Mitigation

Mitigation measures to reduce potentially significant impacts are formulated after it has been substantiated that an impact is potentially significant. Mitigation measures must be feasible to be enforced and implemented by the project applicant, lead agency, or other responsible agency. There must be a nexus between the impact and the mitigation measure and the mitigation measure must be roughly

[3] 1. Bright-line thresholds are a numeric threshold that assesses total impacts generated by a project compared to existing conditions. Projects that exceed a bright-line threshold are typically considered to have a significant impact. Projects that fall under a bright-line threshold (with or without mitigation) are less than significant.

[4] An example of the City's screening-level analysis is traffic. Unless there are unusual circumstances, projects that produce less than 50 peak hour trips during the AM or PM peak period; or do not exceed the established trip budget or entitlement are generally considered to have less than significant impacts and a detailed traffic study is not required. (For a full discussion of screening requirements, refer to the Traffic Impact Analysis Guidelines.)

proportional to the impact created by the project. In other words, mitigation measures are intended to reduce or eliminate environmental impacts of a proposed project. There must be a link between the mitigation measure proposed and the impact identified in the environmental document (e.g., nexus). In addition, an individualized determination should be made that the necessary mitigation measure is reasonably related to the impact and the extent of the impact (e.g., roughly proportional).

Step 6: Determine Significance after Mitigation

After the implementation of all existing regulations and mitigation, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. The City may choose to approve a project despite these significant and unavoidable impacts, but to do so, it must prepare and approve a statement of overriding considerations as part of the Final EIR certification.

1. Introduction

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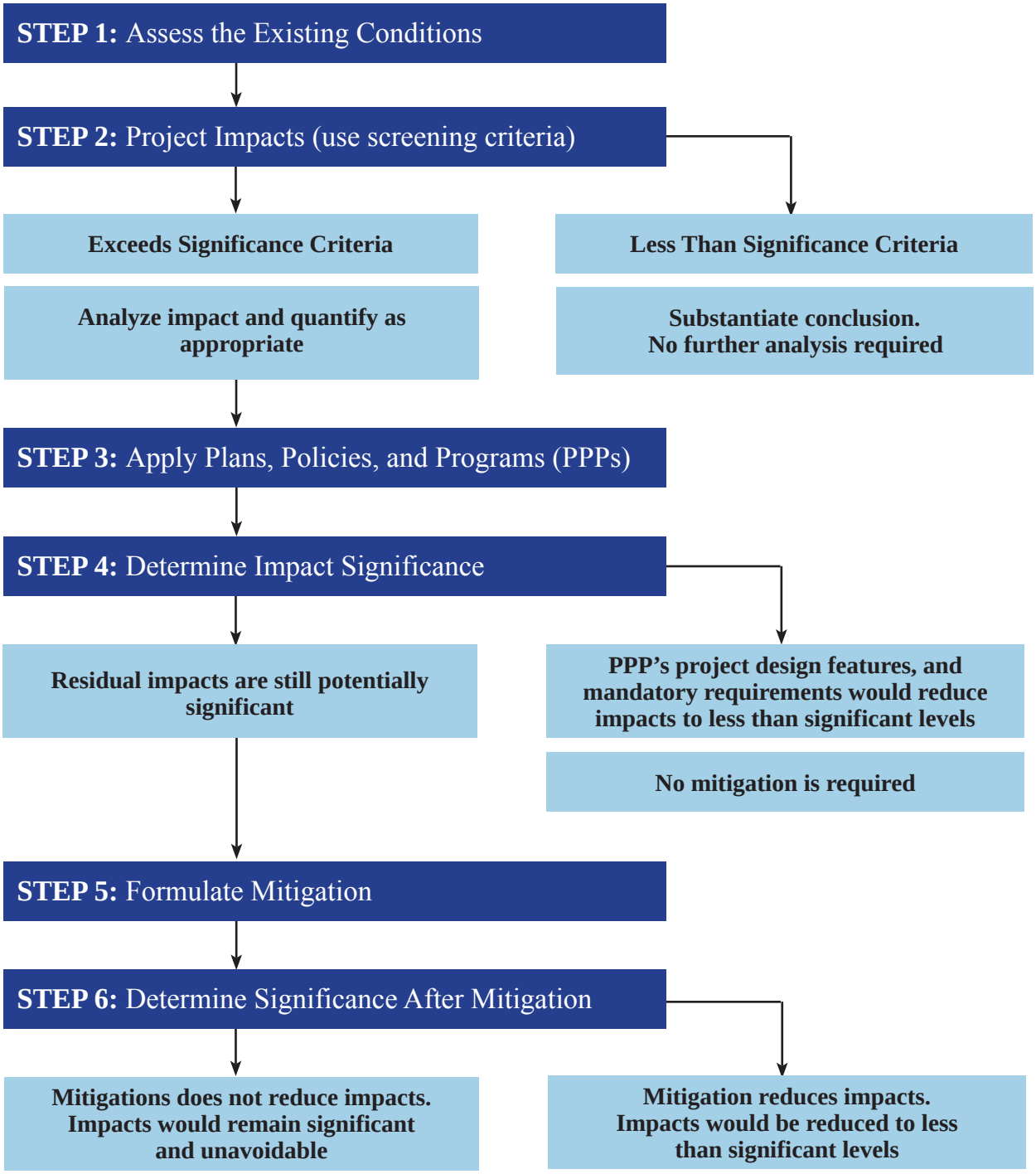
General Approach for Environmental Analysis



1. Introduction

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1.3 SOURCES OF INFORMATION

Appendix B includes a list of available common sources or references providing scientific or factual data that can be used to determine potential environmental impacts. Several environmental topical chapters of the Irvine CEQA Guidelines also provide standard reference data and figures that further demonstrate the potential for environmental impacts.

1.4 PLANS, POLICIES, AND PROGRAMS

A list of applicable PPPs that have been adopted by the City, regional agencies, state agencies, or federal government are provided in Appendix C of the Irvine CEQA Guidelines. This section provides a non-exclusive list of PPPs that may be cited for their potential to reduce project impacts.

1.5 IRVINE STANDARD CONDITIONS OF APPROVAL

The City of Irvine's Standard Conditions of Approval are included in Appendix E. While many of these Standard Conditions of Approval are also included as PPPs, this section is intended to provide an up-to-date list of Standard Conditions applied to development projects in the City.

1.6 SENATE BILL 226 – CEQA STREAMLING FOR INFILL PROJECTS

The Governor's Office of Planning and Research is proposing additions to the CEQA Guideline to reflect changes to the streamlining review process for infill projects under Senate Bill 226 (SB 226). Proposed performance standards that determine an infill project's eligibility for streamlined review are included in Appendix I.

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2. Environmental Review Process

2.1 DESCRIPTION OF THE ENVIRONMENTAL REVIEW PROCESS

The following is a summary of the environmental review process. Detailed information on the environmental review process for the City of Irvine can be found in Volume I, Environmental Procedures, and in CEQA and the State CEQA Guidelines.[1]

In recognition of Section 65941 of Chapter 4.5 of the Permit Streamlining Act, the City of Irvine (lead agency) will simultaneously review the project entitlements under applicable state and local rules, and conduct the necessary environmental analysis. The state and local entitlement processing rules vary depending on the particular permit authority in question, but the process generally involves comparing the proposed project with existing statutes, codes, and regulations. The procedure usually results in a public hearing followed by a written decision by the agency or its designated officer. Typically, a project may be approved, denied, or approved subject to specified conditions.

The CEQA procedure involves a number of steps which produce an environmental document informing the lead agency's as well as the responsible and/or trustee agencies' permit decisions.

The first step in the CEQA process is to determine whether the proposed project is subject to CEQA. There are a number of statutory and categorical exemptions. If the project is not covered by CEQA, the lead agency may file a Notice of Exemption. If the project is covered by CEQA, the lead agency must prepare an Initial Study to determine whether the project may have a significant adverse impact on the environment. The initial study must be completed within 30 days after an application is accepted as complete.

If the Initial Study shows that the project will not have a significant effect on the environment, the lead agency may prepare and circulate a Negative Declaration. Where potential significant effects are shown, but the project is modified to include mitigation measures such that the effects are rendered insignificant, the lead agency may prepare and circulate a mitigated Negative Declaration. In either case, the public review period for a Negative Declaration of mitigated Negative Declaration may not be less than 20 days. If the Negative Declaration is submitted to the State Clearinghouse for review the Negative Declaration must be circulated for review for 30 days. If a project is subject to both CEQA and the National Environmental Policy Act (NEPA) it must be ready for adoption by the lead agency within 105 days after a completed application is accepted.

If the Initial Study shows that the project may have one or more significant effects, the lead agency must circulate a Notice of Preparation (NOP) in anticipation of preparing an environmental impact report (EIR) and must consult with responsible and trustee agencies as to the content of the environmental analysis (see Appendix H for a list of common agencies). Responsible agency means a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR

[1]The material in this Section is intended to be descriptive of the CEQA process. In the event of any perceived or actual conflict between the information in this section and the prescriptive requirements of CEQA and the State CEQA Guidelines, CEQA and the State CEQA Guidelines control.

or Negative Declaration. For the purposes of CEQA, a responsible agency includes all public agencies other than the Lead Agency which have discretionary approval power over the project.[2] Trustee agency means a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California.[3]

Responsible agencies have 30 days to respond to the NOP. If a responsible or trustee agency does not respond, the lead agency may assume that the responsible agency has no response to make.

Following the close of the NOP response period, the lead agency must prepare and then circulate a Draft Environmental Impact Report (DEIR). All concerned agencies and the public may review the DEIR. All comments on the DEIR must be made within the 45 day review period. Comments from responsible or trustee agencies shall be limited to those project activities which are within the agency's are of expertise, are required to be carried out or approved by the agency, or will be subject to the exercise of powers by the agency.

At the close of the review and comment period, the lead agency must respond in writing to the comments received.

The lead agency prepares and certifies a Final Environmental Impact Report (FEIR). If the lead agency approves the project, it must find that each significant impact will be mitigated below the level of significance where feasible, that mitigation is within the responsibility and jurisdiction of another agency, or that overriding social or economic concerns merit the approval of the project in the face of unavoidable effects.

With the CEQA and project review process completed, the lead agency must approve or deny the project within 6 months of certifying the EIR or within 3 months of adopting the Negative Declaration. After approving the environmental document, the lead agency should file a Notice of Determination (NOD). Responsible agencies must then act within six months after the lead agency's action or, if the developer-applicant has not already filed an application with a responsible agency, within six months from the time the application is filed (except as modified under Health and Safety Code Section 25199.6).[4]

2.2 TYPES OF ENVIRONMENTAL DOCUMENTS

2.2.1 Statutory Exemptions

Statutory exemptions are projects specifically excluded from CEQA consideration as defined by the State Legislature. These exemptions are delineated in PRC Section 21080 et seq. A statutory exemption applies

[2] An example of a responsible agency is the Santa Ana Regional Water Quality Control Board for a project requiring a 404 Permit.

[3] An example of a trustee agency is the California Department of Fish and Game with regard to the fish and wildlife of the state, to designated rare or endangered native plants, and to game refuges, ecological reserves, and other areas administered by the department.

[4] A public agency that is a responsible agency for a hazardous waste facility project that is a land disposal facility are required to approval or disapprove a project in the following time periods, whichever is longer: (1) within one year from the date on which the lead agency approved or disapproved the project; or (2) within one year from the date on which the completed application for the project has been received.

to any project that falls under its definition, regardless of the project's potential impacts on the environment.

2.2.2 Categorical Exemptions

Categorical exemptions operate differently from statutory exemptions. Categorical exemptions are made up of classes of projects that generally are considered not to have potential impacts on the environment. Categorical exemptions are identified by the State Resources Agency and are defined in the State CEQA Guidelines (14 CCR Section 15300-15332). Unlike statutory exemptions (which are exempt from CEQA even if they have environmental impacts), categorical exemptions may not be used for projects that may cause a significant effect on environment due to unusual circumstances. There are 32 classes of categorical exemptions.

2.2.3 Initial Study

Initial Studies provide a preliminary analysis of a proposed action to determine whether a Negative Declaration or an EIR should be prepared. An Initial Study also enables an applicant or Lead Agency to modify a project to mitigate significant adverse impacts in lieu of preparing an EIR, thereby potentially enabling the project to qualify for a Negative Declaration. The Initial Study provides a factual basis for the Negative Declaration, or serves to focus an EIR on the significant effects of a project. The Initial Study must contain the following:

- project description
- environmental setting
- an identification of potential environmental impacts by use of checklist, matrix, or other method, and brief explanations to support findings
- a discussion of ways to mitigate the significant effects identified, if any
- an examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls.
- names of parties responsible for preparation

The lead agency may use the environmental checklist form found in Appendix G of the State CEQA Guidelines. The City's Environmental Information Form and Environmental Checklist are included in Appendix G of the Irvine CEQA Guidelines.

2.2.4 Negative Declaration

A negative declaration is a written statement describing the reasons that a proposed project will not have a significant effect on the environment, and does not require the preparation of an EIR. A negative declaration should contain, but not be limited to, the following:

- A brief description of the project including a commonly used name for the project;
- The location of the project, shown on a map, and the name of the project proponent;
- A proposed finding that the project will not have a significant effect on the environment;
- An attached copy of the initial study documenting reasons to support the finding; and
- Mitigation measures, if any, which are incorporated into the project descrition, included in the project to avoid potentially significant effects.

If the Initial Study indicates that potentially significant impacts could be mitigated to a level of insignificance with the incorporation of mitigation measures, then a mitigated negative declaration (MND) would be prepared. A MND is a negative declaration (ND) that incorporates revisions (mitigation measures) in the proposed project that will avoid or mitigate impacts to a point where clearly no significant impacts to the environment would occur.

2.2.5 Environmental Impact Report

The requirement to prepare an EIR is the core exercise of CEQA. An EIR is a disclosure document that serves to inform governmental agencies and the public of a project's environmental impacts. Further, an EIR proposes mitigation measures and alternatives which may reduce or avoid the environmental impacts. Just as the EIR is considered the central component of CEQA, mitigation and alternatives are considered the most meaningful components of an EIR, where they are required.

The EIR process begins with the circulation of a Notice of Preparation (NOP) which informs the public, responsible agencies, trustee agencies, and the Office of Planning and Research that an EIR will be prepared for a given project. The NOP must include sufficient project description details and likely environmental effects such that agencies and public citizens can provide meaningful comments on the proposed project for analysis in the EIR. The NOP comment period is no shorter than 30 days.

After preparation of the draft EIR, a Notice of Completion (NOC) must be submitted to the Office of Planning and Research which includes project location, location of review copies, and public comment review period information. The lead agency must provide public notice of the draft EIR at the same time it issues the NOC, and it must be posted in the office of the County Clerk for at least 30 days. This notice must include the location of any public meetings intended to solicit comments on the draft EIR. If the draft EIR is circulated through the State Clearinghouse, then the public comment period must be a minimum of 45 days, unless a shortened review period is approved by responsible and trustee agencies in advance.

The lead agency must prepare a final EIR before approving the project. The contents of a final EIR are specified in Section 15132 of the State CEQA guidelines, and include formal responses to comments made on the draft EIR. The lead agency then certifies the final EIR and issues its findings. Should significant and unavoidable impacts remain after mitigation, a Statement of Overriding Considerations must be prepared and, if the project is approved, adopted. Finally, the lead agency may decide whether or how to approve or carry out the project at which time a Notice of Determination (NOD) must be filed within 5 days of approval. Filing of the NOD begins a 30-day statute of limitations for filing a lawsuit challenging the adequacy of the EIR. If the lead agency does not file an NOD, the statute of limitations increases to 180 days. Additional requirements for filing depend on whether the lead agency is a state or local agency.

Contents of the EIR

As stated above, an EIR contains standard sections that are specified in Sections 15122 through 15130 of the State CEQA guidelines. The contents of an EIR include:

- A table of contents or index;
- A brief summary of the proposed actions and their consequences;
- A detailed description of the project;

- Description of the environmental conditions in the vicinity of the project;
- Consideration and discussion of environmental impacts (organized into impact categories outlined in Chapter 3 of this document);
- Consideration and discussion of significant environmental impacts (including significant unavoidable and adverse impacts) ;
- Mitigation measures proposed to minimize significant effects;
- Alternatives to the proposed project;
- A statement indicating the reasons that various possible significant effects of a project were determined not to be significant (often addressed in the Initial Study, attached as an appendix);
- A list of organizations and persons consulted; and
- Discussion of cumulative impacts.

In regards to project alternatives, one alternative that a lead agency must consider is the no project alternative, that is, the conditions that would occur based on current plans and consistent with available infrastructure and community services if the project were not approved. Among all the alternatives, the EIR identifies the environmentally superior alternative; if the environmentally superior alternative is the no project alternative, the EIR identifies the environmentally superior alternative among the other alternatives.

The Final EIR consists of the materials listed in Section 15132 of the State CEQA Guidelines.

2.2.6 Types of EIRs

There are various types of EIRs used to document environmental impacts under CEQA, as defined by sections 15160 to 15170 of the State CEQA Guidelines. For reference, the definitions of EIRs that are most commonly used by the City of Irvine are provided below.

Project EIR. The most common type of EIR examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation.

Subsequent EIR. A subsequent EIR has the same content, noticing and public review requirements as the earlier EIR. It is prepared by the public agency that grants the next discretionary approval for the project, and no other agencies can approve the project until the subsequent EIR is certified. The baseline environmental conditions in a Subsequent EIR should be analyzed pursuant to the State CEQA Guidelines.

CEQA requires a subsequent EIR when:

- Substantial changes in the project cause new significant impacts or an increase in previously identified impacts.

- Substantial changes in the circumstances cause new significant impacts or an increase in previously identified impacts.

- New information of substantial importance becomes available that indicates that: 1) the project would have a new significant impact; 2) the project would create an impact of greater severity; 3) mitigation

measures or alternatives that the EIR found infeasible are now feasible, but are declined by the applicant; 4) mitigation measures or alternatives are identified that are considerably different than those in the EIR and would substantially reduce a significant impact, but are declined by the applicant.

Supplement to an EIR. If a project meets the conditions for a subsequent EIR, but only minor changes to the previous EIR are required, the lead agency can prepare a supplement to an EIR. A supplement need contain only the information necessary to make the original EIR adequate. A supplement may be circulated by itself, without the previous EIR, but the decision-making body shall consider both the previous EIR and the supplemental EIR. The baseline environmental conditions in a Supplement to an EIR should be analyzed pursuant to the State CEQA Guidelines.

Addendum to an EIR. An addendum to an EIR is generally prepared when changes or additions to a certified EIR do not meet the criteria for a subsequent or supplemental EIR or negative declaration. An addendum is usually used for minor technical changes. It does not need public review, but must be considered along with the Final EIR or adopted negative declaration. A brief explanation of the decision not to prepare a subsequent or supplemental EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

Program EIR. A Program EIR examines the total scope of environmental effects that would occur as a result of buildout of the entire project site. By examining the full scope of the proposed project and subsequent applications and approvals at this early stage of planning, the Program EIR provides a full disclosure of the environmental impacts that may occur throughout the project site, together with an analysis of the site-specific and cumulative environmental impacts that will occur throughout the buildout timeframe of the proposed project.

Although the legally required contents of a Program EIR are the same as those of a Project EIR, Program EIRs are typically more conceptual and may contain a more general discussion of impacts, alternatives, and mitigation measures than a Project EIR. As provided in Section 15168 of the State CEQA Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project. Use of a Program EIR provides the opportunity to consider broad policy alternatives and program-wide mitigation measures and provides the City with greater flexibility to address project-specific and cumulative environmental impacts on a comprehensive basis.

Projects that are proposed within the Program EIR's area may be able to tier off the Program EIR. Subsequent activities within the program must be evaluated to determine whether additional CEQA documentation needs to be prepared. However, if the Program EIR addresses the program's effects as specifically and comprehensively as possible, many subsequent activities can be found to be within the Program EIR scope and additional environmental documents may not be required (Guidelines Section 15168(c)). When a Program EIR is relied on for a subsequent activity, the lead agency must incorporate feasible mitigation measures and alternatives developed in the Program EIR into the subsequent activities (Guidelines Section 15168(c)(3)). If a subsequent activity would have effects that are not within the scope of the Program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or an EIR. In that case, the Program EIR still serves a valuable purpose as the first-tier environmental analysis. The State CEQA Guidelines encourage the use of Program EIRs, citing five advantages:

1) To provide a more exhaustive consideration of impacts and alternatives than would be practical in an individual EIR.

2) To focus on cumulative impacts that might be slighted in a case-by-case analysis.

3) To avoid continual reconsideration of recurring policy issues.

4) To consider broad policy alternatives and programmatic mitigation measures at an early stage when the agency has greater flexibility to deal with them.

5) To reduce paperwork by encouraging the reuse of data (through tiering).

2.3 PROCESSING PROJECTS PURSUANT TO A CERTIFIED PROGRAM EIR

The City is divided into Planning Areas, which are shown in Figure 2-1, *City of Irvine Planning Areas*. In order to reduce the amount of paperwork and unnecessary environmental analysis, the City of Irvine has prepared program EIRs for some Planning Areas. In these circumstances, the project may tier off the program EIR (see Section 2.2.6, Types of EIRs). The original program EIR identifies potential environmental impacts compared to the existing physical conditions at the time of preparation. When preparing an Addendum, Supplement to an EIR, or Subsequent EIR the physical impacts identified in original program EIR constitutes the baseline environmental conditions that can be used to determine new or substantially more severe environmental impacts than shown in the previous program EIR. If no program EIRs have been prepared, or if the area is completely built-out, this is noted. Copies of the program EIRs are available at the City.

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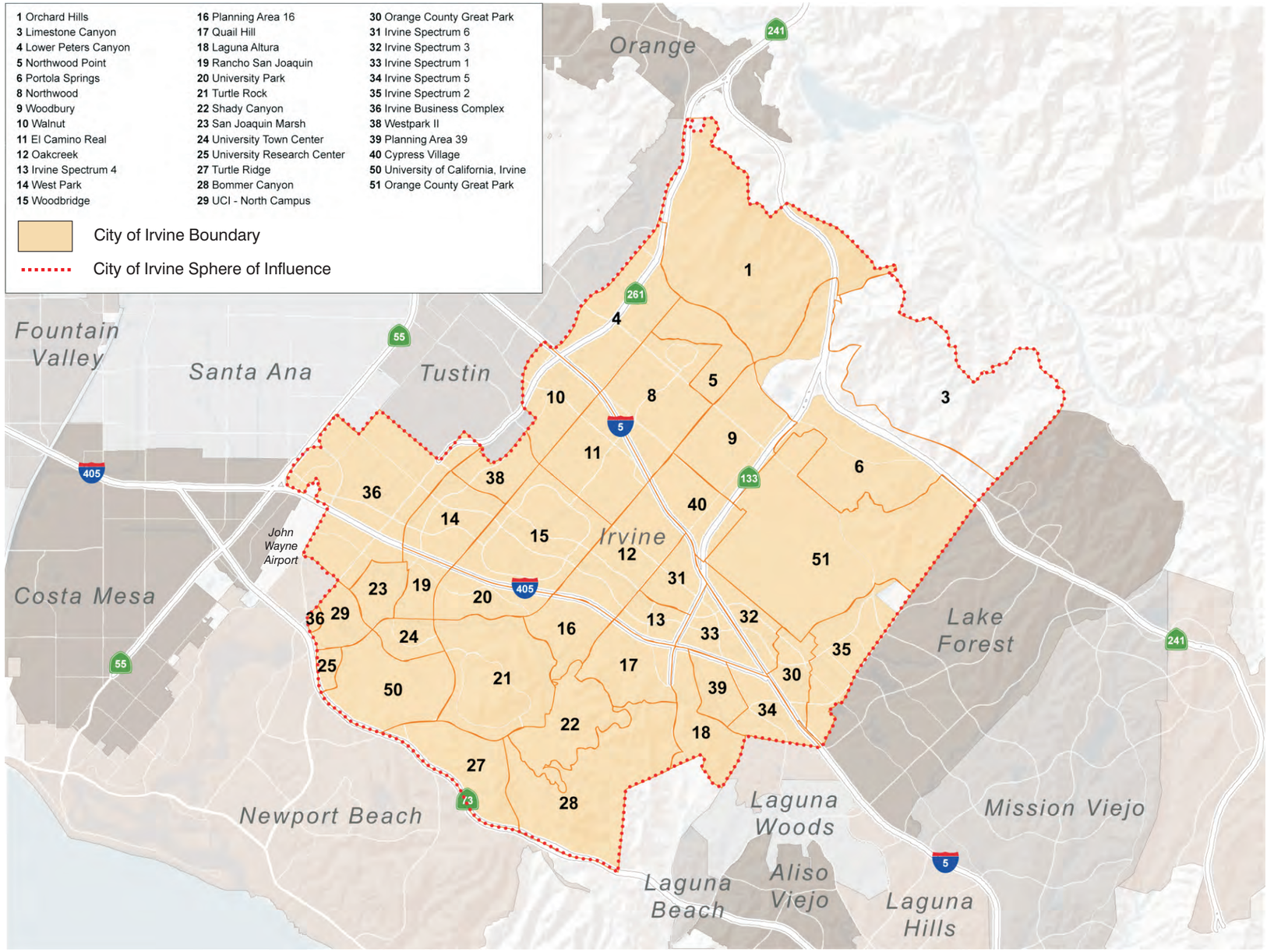
City of Irvine Planning Areas



Source: SCAG 2007; SCAG 2008; City of Irvine 2011

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3. Environmental Impact Categories

3.1 AESTHETICS

Aesthetics, views and visual resources, light and glare, and shade and shadow issues are all related elements of the visual environment.

Relevant Planning Programs

There are several previous land use planning actions adopted by the City and other regional programs that are relevant to the protection of visual resources. The following is a discussion of these planning actions and programs.

Initiative Resolution 88-1 and General Plan Amendment 16

In June 1988, Initiative Resolution 88-1, entitled "An Initiative Resolution of the City of Irvine Directing the Amendment of the Conservation and Open Space Element and the Land Use Element of the Irvine General Plan" (Open Space Initiative) was adopted by the City of Irvine voters. This resulted in the establishment of the Conservation/Open Space Program that provides for the eventual public ownership of approximately 9,000 acres of open space to be accomplished through the transfer of development opportunities to areas that can better accommodate development in exchange for the transfer of open space to the public. By consolidating large contiguous areas of open space designated for preservation, and permitting development to occur in areas deemed to be of lesser open space value, the Conservation/ Open Space Program preserves important conservation and open space resources.

Following approval of Resolution 88-1, the City and The Irvine Company executed a Memorandum of Understanding (MOU) to implement the open space program and establish the Phased Dedication and Compensating Development Opportunities Program (Dedication/ Development Program). The areas of the City directly affected by the Dedication/ Development Program were divided into lettered "Implementation Districts" containing both designated open space dedication areas and corresponding development areas (see Figure 3.1-1, *Dedication/ Development Program Implementation Districts*).

Natural Community Conservation Plan/Habitat Conservation Plan

The City of Irvine is located within the boundaries of Orange County's Central-Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Preparation of NCCPs was authorized by the Natural Community Conservation Act, California Fish and Game Code Sections 2800–2840 (NCCP Act), which was signed into law in 1991. The Reserve areas, as well as areas identified for development, are identified in the NCCP/HCP. The NCCP/HCP is a state program designed to protect critical habitat through a comprehensive management and conservation program while at the same time providing for reasonable economic development. The NCCP Act is designed to protect important habitat before it becomes necessary to declare certain species that use that habitat as endangered. It provides an alternative to protecting species on a "single species basis" as with the Federal Endangered Species Act (FESA) (16 U.S.C. Section 1531 et seq.) and the California Endangered Species Act (CESA) (Fish and Game Code Section 2050, et seq.). Under the NCCP Act, the California Department of Fish and Game (CDFG) is responsible for implementing process planning and conservation guidelines for NCCP programs.

3. Environmental Impact Categories

AESTHETICS

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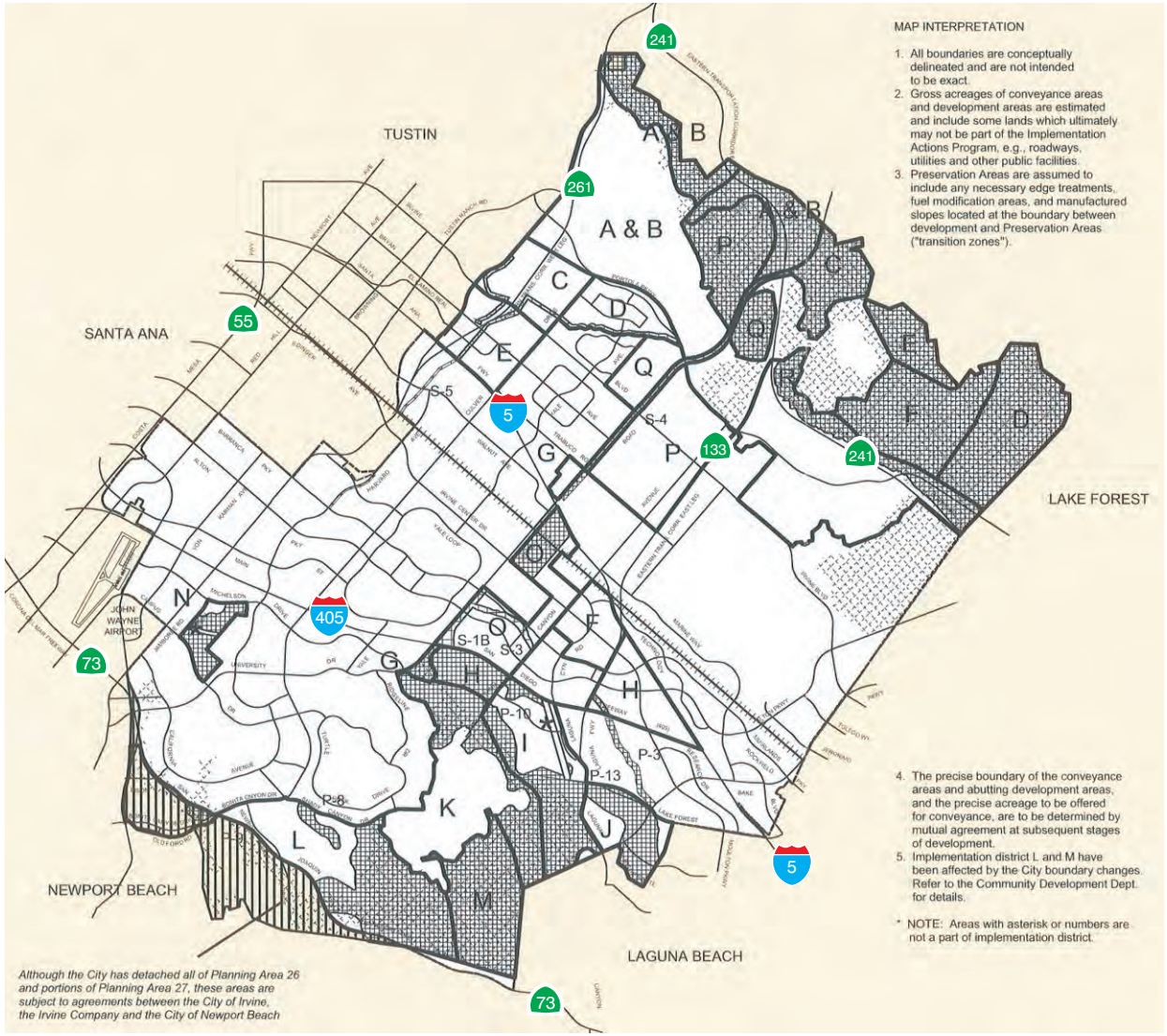
Dedication/Development Program Implementation Districts



LEGEND

- City Sphere of Influence
- Preservation Area
- Spine
- Development Area
- NCCP habitat identified for future public ownership by the Facilitation Agreement (see Apppendix) between the City and the land owner.

0 3
Scale (Miles)

Source: City of Irvine General Plan

3. Environmental Impact Categories

AESTHETICS

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In 1982, FESA was amended to give private landowners the ability to develop Habitat Conservation Plans (HCP) pursuant to Section 10(a) of FESA. Upon development of an HCP, the U.S. Fish and Wildlife Service (USFWS) can issue incidental-take permits for listed species where the HCP specifies, at minimum, the following: (1) the level of impact that will result from the taking, (2) steps that will minimize and mitigate the impacts, (3) funding necessary to implement the plan, (4) alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) such other measures that the Secretary of the Interior may require as being necessary or appropriate for the plan.

In 1996, an Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Orange County Central-Coastal Subregion NCCP/HCP was prepared with the County of Orange and the USFWS as lead agencies, and the CDFG as a responsible agency. Based on the Central-Coastal NCCP/HCP, the USFWS and the CDFG authorized "take" of "Identified Species" and approved modification of "Covered Habitats" under the state and federal ESAs and the federal Migratory Bird Treaty Act (MBTA). Following certification of the EIR/EIS, the participating agencies and landowners, including the City and The Irvine Company, signed an Implementation Agreement (IA). The IA set forth the implementation requirements for the Central-Coastal NCCP/HCP, including requirements related to dedication, creation, and management of a 37,000-acre Nature Reserve System (Reserve), as well as procedures and minimization measures related to take of Identified Species and modification of habitat in areas designated for development.

Aesthetics and Visual Resources

Aesthetics generally refer to the identification of visual resources (natural and man-made) and the quality of what can be seen, as well as to the overall judgment (visual perception) of the visual environment. Aesthetic features occur in a diverse array of environments, ranging in character from urban centers to rural regions and wildlands. Features may include, but are not limited to:

- open space;
- native or ornamental vegetation/landscaping;
- topographic or geologic features (including ridgelines of the Santiago and San Joaquin Hills); and
- natural water features.
- structures of architectural or historic significance or visual prominence;
- public plazas, art or gardens;
- eucalyptus or other trees or plants protected by the City;
- landscaped medians or park areas.

The prominent landforms in the City include the Santiago Hills, northern flatlands, central flatlands, and San Joaquin Hills. The Santiago and San Joaquin Hills have ridgelines that can be seen from various vantage points within the City (including major roadways), while views of the flatlands and the Pacific Ocean can be seen from the higher elevations. The San Diego Creek and numerous other washes, as listed in Table 3.1-1, run through the City. The locations of these visual resources are shown in Figure 3.1-2, *Visual Resources in the City of Irvine*. Predominantly, these resources are protected through the City's Conservation/Open Space Dedication Program described above.

Table 3.1-1
Notable Visual Resources in the City of Irvine

Type of Resource	*Examples in Irvine*
Hills	The Santiago Hills and San Joaquin Hills, including canyons, plateaus, narrow ridges, and rock outcroppings
Natural watercourses[1]	San Diego Creek, Agua Chinon Wash, Bee Canyon Wash, Borrego Canyon Wash, Hicks Canyon Wash, Peters Canyon Wash, Sand Canyon Wash, and San Joaquin Freshwater Marsh
Artificial lakes	Woodbridge Lakes and the William R. Mason Regional Park lakes

Notes:
[1] Notable visual resources are the natural portions of those watercourses only.

Light and Glare

Light

Light sources are human-made evening and nighttime light. When introduced by a project, they may increase ambient nighttime illumination and glare levels in the immediate project area. Cumulatively, light can affect the night sky condition. Light is addressed in CEQA because it has the potential to interfere with or disrupt certain basic human functions and needs, including vision, sleep patterns, internal cycles, privacy, and the general enjoyment of the natural nighttime condition, such as evening views.

Glare

Glare is a lighting condition that causes an observer to experience visual discomfort as a result of high levels of constant or intermittent brightness. Glare can be caused by either:

- the reflection of the sun off highly reflective surfaces during the day (i.e., daytime glare); or
- the reflection of artificial light sources (e.g., automobile headlights, special events lighting) off reflective surfaces at night (i.e., nighttime glare)

General light and glare requirements that apply to development projects are found in the Standard Conditions of Approval (Standard Condition 3.6) and are provided throughout the various chapters of the City's Municipal Code (Division 9) and Zoning Ordinance (Section 3.16).

Shade and Shadow

The issue of shade and shadow pertains to the blockage of direct sunlight by proposed buildings or other structures (such as walls) that affects adjacent properties and the natural environment. A sample shade-shadow analysis is shown in Figure 3.1-3, *Sample Winter Shade-Shadow Analysis,* and Figure 3.1-4, *Sample Summer Shade-Shadow Analysis*. Land uses sensitive to the effects of shading include:

- routinely useable outdoor spaces associated with residential, recreational, or institutional land uses (e.g., schools, convalescent homes, care facilities);

- commercial uses such as pedestrian-oriented outdoor spaces or restaurants with outdoor eating areas; and
- nurseries

The issue of shade and shadow pertains to the blockage of direct sunlight by on-site buildings, which affects adjacent properties. Shading is an important environmental issue because the users or occupants of certain land uses, such as residential, recreational, outdoor restaurants, and pedestrian areas have expectations for direct sunlight and warmth from the sun. Factors that influence the extent and range of shading include season; time of day; weather; building height, bulk, and scale; spacing between buildings; and tree cover. The longest shadows are cast during the winter months, when the sun is lowest on the horizon, and the shortest shadows are cast during the summer months. Shadows are longer in the early morning and late afternoon. The City does not have any specific provisions in regulating shade or shadow impacts. Therefore, impacts will be determined on a case-by-case basis considering factors such as adjacent land use, sensitivity to shade/shadow, time of day of the impact, and the duration of the impact.

Scenic Highways

State-Designated Scenic Highways

State scenic highways are either officially designated as state scenic highways by the California Department of Transportation (Caltrans) or are eligible for such designation. Eligible scenic highways are identified in the Streets and Highway Code Section 260 of the California Scenic Highway Program. According to the California Scenic Highway Mapping System of Caltrans, there are no officially designated or eligible state scenic highways within the City boundary or in proximity to the City (Caltrans 2007).

Locally Designated Scenic Highways

Figure A-4, *Scenic Highways*, of the City of Irvine General Plan Land Use Element identifies a number of roadways that traverse the City as either Scenic Highways of Rural or Natural Character or Scenic Highways of Urban Character. Table 3.1-2 lists these roadways.

Table 3.1-2
Scenic Highways in Irvine

Highways of Rural or Natural Character	*Highways of Urban Character*
Sand Canyon Avenue (south of I-5)	Sand Canyon Avenue (north of I-5)
Jeffrey Road/University Drive (south of I-5 and north of Portola Parkway)	Jeffrey Road
Laguna Canyon Road/Laguna Freeway (south of I-405)	Culver Drive
Bonita Canyon Road/Shady Canyon Road	I-5/I-405 (south of split)

These designations are intended to minimize the impact of land development on the visual and scenic resource along these designated roadways. Through the City's General Plan and Zoning Ordinance, the City specifies development guidelines and standards that help minimize the obstruction of views and maintain existing scenic highways.[1]

[1] Views from private property are not protected by CEQA or the City of Irvine. Therefore, all views addressed in these guidelines are public views, not private views.

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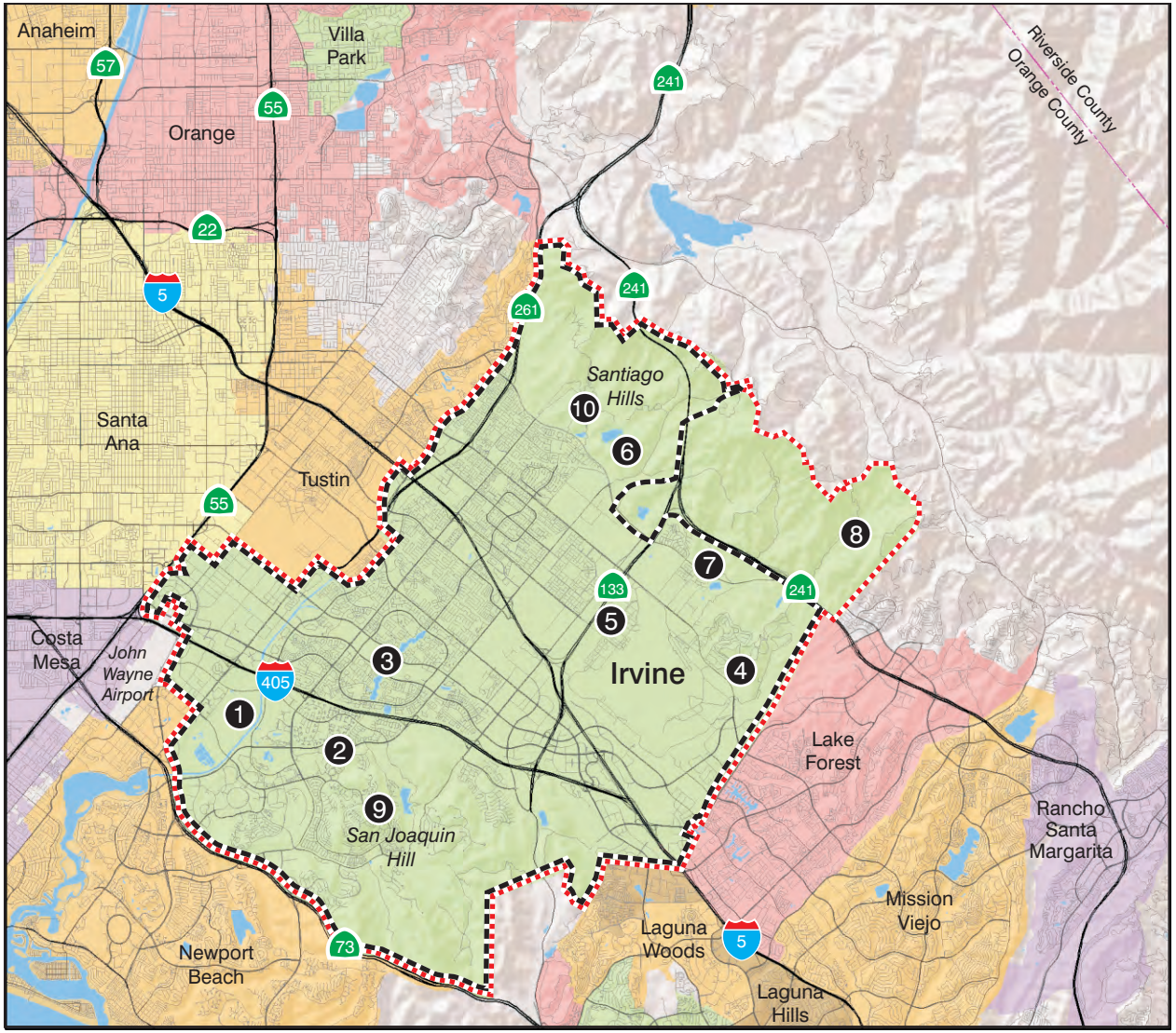
Visual Resources in the City of Irvine



LEGEND

1. San Joaquin Marsh
2. William R. Mason Regional Park/ Sand Canyon Wash
3. Woodbridge Lakes
4. Borrego Canyon Wash
5. Peters Canyon Wash
6. Hicks Canyon Wash
7. Bee Canyon Wash
8. Agua Chinon Wash
9. San Joaquin Hill Ridgeline
10. Santiago Hills Ridgeline

City of Irvine Boundary

City of Irvine Sphere of Influence

0 3
Scale (Miles)

Source: City of Irvine General Plan

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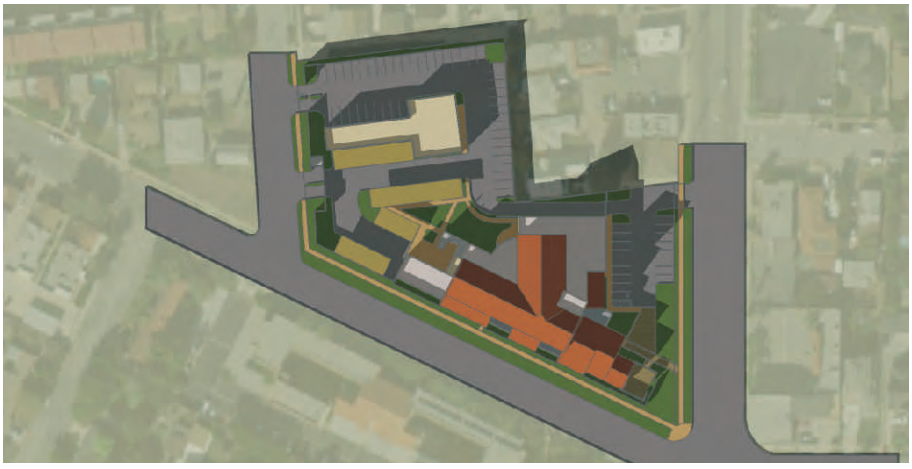
Sample Winter Shade-Shadow Analysis

9:00 AM December 21

12:00 PM December 21



3:00 PM December 21

NOT TO SCALE

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Sample Summer Shade-Shadow Analysis

9:00 AM June 21

12:00 PM June 21

4:00 PM June 21

NOT TO SCALE

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3.1.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for aesthetic resources. A project would normally have a significant effect on the environment if the project would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.1.2 Determining Significance

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The aesthetics environmental analysis should look at the questions provided in this flow chart. Additional questions that pertain specifically to aesthetics are provided under each step of the "General Approach for Environmental Analysis" flow chart.

Step 1: Determine the Existing Conditions

- Is the site developed or vacant?
- If it is vacant, has it been developed in the past or is it natural?
- If it is developed, what are the characteristics of the onsite development?
- What types of vegetation and natural features (e.g., water or rock outcroppings) are on the site?
- Are there visual resources as documented in Table 3.1-2 or on Figure 3.1-2 on or near the site?
- Who has a view of the project site? Are these public or private views? What views do people on the project site have?
- Is the site and surrounding areas well lit or are they dark?
- What are the existing lighting facilities and building materials?
- Are there surrounding land uses that would be sensitive to light (i.e. residential land uses, nursing homes, natural habitat, etc)? How far are light-sensitive land uses from the project boundaries?

AESTHETICS

Step 2: Project Impacts

The following issues and questions should be taken into account when determining whether the project would have potential impacts.

- Is the site planned for development by the City's General Plan?
- What would the project look like during construction and after completion?
- How much grading is involved? Are landforms altered?
- What would be the proposed building setbacks, scale, and massing? Are they consistent with City Code?
- What are the proposed construction materials, architectural themes, and landscaping features? Will reflective surfaces be used?
- Is the project visible from a designated local or state scenic highway?
- What lighting features would be included with the proposed project?
- In which direction would project-generated lighting be directed? What intensity would lighting have?
- Would proposed lighting routinely spill over onto adjacent sensitive land uses? (Note: Lighting studies, which may be used to determine the amount and intensity of lighting sources and their impact on surrounding light-sensitive land uses, are described under "Methodology.")
- For projects involving a change in policies or long-range programs (e.g., General Plan Update), where specific structure designs (e.g., elevations and/or building footprints) have not been identified, use the maximum development envelope (e.g., maximum buildings heights, minimum setbacks, and maximum lot coverage) permitted according to the applicable zoning.

Step 3: Apply Plans, Policies, and Programs

- Is the project subject to the City's design guidelines that are specific to an area (e.g., IBC Vision Plan, UCI's Long Range Development Plan) or are there design guidelines in the Program EIR for the area where the project is located?
- Reference the following design manuals, municipal code sections, and/or standard conditions of approval for the details on existing regulations:
    - Conservation/Open Space Dedication Program
    - Section VII of the City of Irvine Park Standards Manual (Athletic Field Lighting Standards)
    - Standard Condition 3.6, Site Lighting Requirements, of the Standard Conditions of Approval
    - Irvine Uniform Security Code (in the Irvine Municipal Code), for lighting requirements
    - Hillside Overlay District (City of Irvine Zoning Code)

Step 4: Determine Impact Significance

For aesthetic impacts, the degree of significance is based on how much the project would alter the existing visual setting (e.g., landforms, landscaping, building massing) by either damaging a publicly-viewed aesthetic resource or introducing substantial light or glare sources. Other factors to consider include the scale of development originally considered for the site and surrounding areas, and whether the project impacts open space as required by the City's Open Space Dedication Program. Questions to consider include:

- Does the project substantially change the existing appearance of the site or the surrounding properties through features such as increased massing inconsistent with the surrounding development?
- Does the project limit visual access to open space areas, particularly from scenic highways?
- If the project changes the existing appearance of the site, is the change consistent with the General Plan or zoning designations for that site and does it conform to the adopted design guidelines?

Impacts to aesthetic resources are hard to quantify and typically rely on photo renderings. For light and glare or shade and shadow impacts, the degree of significance can be based on quantitative evidence. Questions to consider include:

- Does the project block sunlight on an adjacent property?
- Does it contribute excessive light and glare on an adjacent property? Software programs can provide simulations that help make these determinations.
- After using lighting and shade impact analysis methods (described below), does the project negatively impact adjacent sensitive land uses?

Aesthetic resource impact analysis may require specific methods or techniques to assess impacts. The following describes these methods:

Aesthetic Resources and Visual Simulations

Line of Sight Analysis

If scenic resources are identified on or near a proposed project, or if they can be seen from the project site, and the proposed project may have potential to obstruct these resources, a line of sight analysis may be used to determine the impact significance. Multiple viewpoints and focal points should be identified on a map of the area. Lines of sight should be used to connect the viewpoints and focal points. For each view line, a view section (cross-section) may also be prepared. View sections depict locations and elevations of the viewpoint, view resources, and project elements. These sections should identify the extent to which the view is clear or obstructed by existing and proposed structures. If the proposed project would obstruct a view, additional field of view analysis may be needed to determine the extent to which project elements would obstruct the view.

Photo Renderings

When a project requires additional analysis to determine how it would alter the existing terrain, the aesthetic analysis should include a discussion based on perspective renderings and visual simulations. A

visual simulation or rendering requires information about building height, footprint, and design. These must be prepared through computer software such as Photoshop or Sketch-up. The resulting image is a photo of the existing site with the rendered image placed over the photo. Multiple viewpoints may be required to accurately depict the proposed project. This technique can be applied to scenic resource analysis or scenic highway resources.

Lighting

When it is determined that a proposed project may produce light that overflows into adjacent light-sensitive properties, a lighting/photometric analysis would be required. This type of analysis requires computer software (such as Autodesk 3ds Max) to calculate how far light would travel and how intense it would be on adjacent land uses. The analysis uses inputs such as the proposed lighting height, type, and intensity (usually measured in foot-candles).

Shade and Shadow

Once it has been determined that the project will include sunlight-blocking structures in excess of three stories or 45 feet in height above the ground that would impact shade-sensitive uses, then a shade and shadow analysis must be prepared to illustrate the extent of the shadows that would be cast at different times of the day. As appropriate, diagram the footprint of the proposed structure(s) and nearby shade-sensitive uses. Calculate and diagram the length of shadows that would be cast by proposed structure(s) during extreme conditions, that is, the winter solstice (December 22) and summer solstice (June 21). The spring and fall equinoxes represent intermediate conditions.

Keep in mind that factors that influence the extent of shading include: season; time of day; weather (i.e., sunny vs. cloudy day); building height, bulk/mass, and scale; topography; spacing between buildings; sensitivity of adjacent land uses; and tree cover. The longest shadows are cast during the winter months, when the sun is lowest on the horizon, and the shortest shadows are cast during the summer months. Shadows are longer in the early morning and late afternoon. Consequences of shadows upon land uses may be positive, including cooling effects during warm weather, or negative, such as the loss of natural light and its warming influences during cool weather.

Step 5: Formulate Mitigation

Mitigation measures to reduce aesthetic impacts would include additional landscaping or berming to shield development from view, alternative grading measures including landform grading, or shifting development away from open, natural areas or on hillsides. Mitigation measures to reduce light impacts generally include directing light away from sensitive land uses to reduce spillage effects, limiting the length of sporting events that use intense nighttime lighting, and placing shades and hoods on lighting fixtures to help direct lighting. The City of Irvine utilizes lighting and aesthetic resource restrictions that would preclude the need for additional mitigation measures for most impacts (see Step 3). For instance, the City of Irvine's Uniform Security Code (Title 5, Division 9 of the Irvine Municipal Code) includes 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 nonresidential development; lighting for parking areas; and sign illumination. If impacts remain significant after the implementation of required development standards and restrictions, mitigation measures that directly correspond to the potentially significant impact must be identified. There must be a nexus between the project impact and the mitigation measure proposed to reduce the impact.

Step 6: Determine Significance after Mitigation

As described in the flow chart in Chapter 1, a determination of project impacts after all mitigation measures, PPPs, Standard Conditions of Approval, and other restrictions and regulations have been implemented should be made. Any remaining significant and unavoidable impacts shall be identified. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding Considerations if it chooses to approve a project despite such significant and unavoidable impacts.

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3.2 AGRICULTURE AND FORESTRY RESOURCES

The City of Irvine comprises 69.7 square miles in the coastal and foothill region of central Orange County. The prominent landforms in the City include the Santiago Hills, northern flatlands, central flatlands, and San Joaquin Hills (see Figure L-1, Landform Zones, of the City's General Plan Conservation and Open Space Element). The San Joaquin Hills consist of rolling terrain with moderately steep slopes, canyons and narrow ridges. Agriculture and forestry resources generally occur in the Santiago Hills, San Joaquin Hills, and northern flatlands areas of the City of Irvine.

Relevant Planning Programs

State

Farmland Mapping and Monitoring Program

The California Department of Conservation (CDC), through the Farmland Mapping and Monitoring Program (FMMP) of the Division of Land Resource Protection classifies agricultural lands as shown in Table 3.2-1.

The farmland classification areas within the City of Irvine are shown in CDR's farmland designation map of Orange County, known as the "Orange County Important Farmland Map 2008." The portion of the map that encompasses the City of Irvine and general vicinity is reproduced as Figure 3.2-1, *Farmland Designations*. As shown in Figure 3.2-1, the City consists of a variety of the aforementioned land classifications, with the majority of farmland classifications occurring in the northern portion of the City.

Williamson Act

In 1965, the State of California enacted the California Land Conservation Act, more commonly known as the Williamson Act (California Government Code Section 51230 et seq.). 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 City.

Local

Northern Sphere Area and Agricultural Legacy Program

Buildout of the City of Irvine and its Sphere of Influence (SOI) in accordance with the City's 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 the City and its Sphere of Influence (SOI)—specifically, Planning Areas (PA) 1, 2, 5, 6, 8, 9, 18, 30 39, 40, and 51. This effort has resulted in the revision of Policy L-10(a) of the General Plan Conservation and Open Space Element. As revised, the General Plan objective states "Encourage the maintenance of agriculture in undeveloped areas of the City until the time of development, and in areas not available for development." Objective L-10 was intended by the City to apply throughout the City and its SOI.

Table 3.2-1
Agricultural Land Classifications

Land Classification	Definition
Prime Farmland	Farmland with the best combination of physical and chemical features and able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date of 2004.
Farmland of Statewide Importance	Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
Unique Farmland	Farmland of lesser-quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards, as found in some climatic zones in California. Land must have been cultivated 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.
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, sewage treatment plants, and water control structures.
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, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres 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, 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.[1]

Source: CDC 2011.

[1] In the City of Irvine, this overlay encompasses lands owned by The Irvine Company.

The purpose of the Agricultural Legacy Program outlined in Policy L-10(a) is to facilitate limited scale agricultural operations and programs on public lands within Irvine, including 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 (SCE) easements, where produce is grown within the public easements and sold by the farmer.

The Agriculture Legacy Program has led to additional efforts and studies in the City:

- In 2003, the Irvine Agricultural Legacy Program Preliminary Sites Assessment study evaluated eight candidate sites and various SCE easements/properties for inclusion in the program.

- In 2005, as a part of the PA 1/PA 2/PA 9 Project, 508 acres of existing avocado groves within PA 1 were redesignated Agriculture under the City's General Plan Land Use Element (see Figure A-3, Land Use, of the General Plan Land Use Element) and zoned 1.1 Exclusive Agriculture.

Orange County Great Park

As shown in Figure 3.2-1, some portions of the Orange County Great Park property (PA 51 and 30), which is the former MCAS El Toro, are designated Prime Farmland and Farmland of Statewide Importance. As part of its current proposed development plan for the Orange County Great Park, the City has designated agricultural land to be preserved within the Orange County Great Park, in addition to the land that is and will be included in the City's Agricultural Legacy Program.

Forestry Resources Regulations and Policies

Forestry resources have been added to the City's Initial Study checklist (Section II, Agriculture and Forestry Resources, parts c, d, and e). Forestry resources within the City of Irvine are protected by the City's Conservation/Open Space Program that provides for the public ownership of approximately 9,000 acres of open space to be accomplished through the transfer of development opportunities to areas that can better accommodate development in exchange for the transfer of open space to the public. By consolidating large contiguous areas of open space designated for preservation, and permitting development to occur in areas deemed to be of lesser open space value, the Conservation/ Open Space Program preserves important conservation and open space resources.

Forest Land and Timberland Classification

The California Public Resources Code categorizes forestry resources as shown in Table 3.2-2.

Table 3.2-2
Forestry Resource Land Classifications

Forestry Resource Classification	*Definition*
Forest Land	In accordance with California Public Resources Code (PRC) Section 12220, forest land is classified as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.
Timberland	In accordance with California PRC Section 4526, timberland is classified as land—other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection as experimental forest land—that is available for and capable of growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees.
Timberland Production Zone	In accordance with California PRC Section 51104, timberland production zone is an area that has been zoned pursuant to PRC Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses.

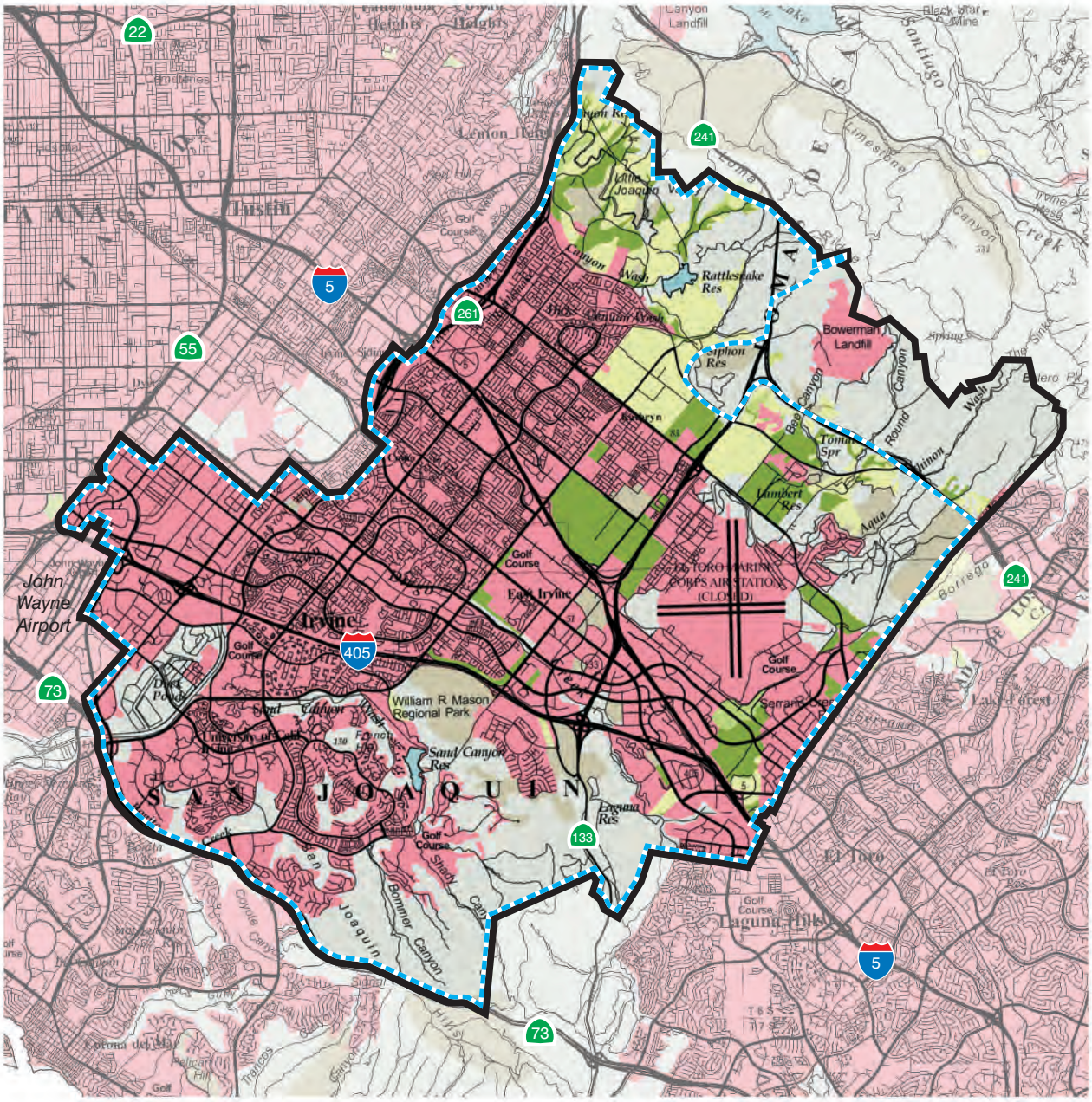
Source: California Public Resources Code Sections 4526, 12220, 51104, 51112, and 51113.

Forest Land Resources

In accordance with the forest land classification of California PRC Section 12220, portions of the City of Irvine consist of forest land resources, including the Santiago Hills and some areas of the northern flatlands, central flatlands, and San Joaquin Hills. Many of these forest resources occur in the areas designated as Eucalyptus Windrows, Sand Canyon Oak Trees, and NCCP Habitat Reserve, as shown in Figure L-4, Biotic Resources, of the City's General Plan Conservation and Open Space Element.

City programs for protecting forestry resources include the Eucalyptus Windrow Maintenance and Protection Plan for Lower Peters Canyon (September 1996) and the Urban Forestry Ordinance (Title 5, Planning, Division 7, Sustainability in Landscaping, Chapter 4, Urban Forestry, of the City's Municipal Code). Applicants are required to carry out a tree survey and obtain a permit for their removal in accordance with the Section 5-7-410 (Tree Removal) of the Urban Forestry Ordinance (including 1:1 replacement).

Farmland Designations



LEGEND

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- City of Irvine Boundary
- City of Irvine Sphere of Influence
- Grazing Land
- Urban and Built-Up Land
- Other Land
- Water

0 2
Scale (Miles)

Source: Farmland Mapping and Monitoring Program, California Department of Conservation. Orange County Important Farmland 2008.

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Timberland Resources

Timberland is land that is available for and capable of growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. In accordance with the classification of California PRC Section 51104, there are no timberland production zones within the City.

3.2.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for agriculture and forestry resources. A project would normally have a significant effect on the environment if the project would:

- 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 non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- 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)).
- Result in the loss of forest land or conversion of forest land to non-forest use.
- 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.

3.2.2 Determining Significance

The method for determining agriculture and forestry resource impacts is based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual.

General Approach

The general steps for determining significance should follow the same steps as described in the flow chart in Chapter 1. Additional questions are provided for each step.

Step 1: Determine the Existing Conditions

The following questions are provided to refine the list of questions in Chapter 1 in order to obtain a more accurate assessment of the existing conditions for agriculture and forestry research analysis.

- Is the site used for agricultural purposes, timberland production, or forestry resources?
    - Does it fall into any of the categories listed in Table 3.2-1 or 3.2-2?
- Is it zoned or designated for agricultural or forest land uses that are not described on Table 3.2-1 or 3.2-2?
- Are there adjacent agricultural or forest land uses (whether they are designated or not)?

AGRICULTURE AND FORESTRY RESOURCES

Step 2: Project Impacts

For each of the City's Initial Study checklist questions (the significance thresholds), the potential for significant impacts to occur must be determined. There are no screening criteria for agriculture impacts but the following questions can be used to help determine whether impacts would be potentially significant.

For thresholds a, b, and e:

- Is the site planned for development by the City's General Plan?
- Are any of the proposed land uses agricultural?
- Would the project remove agricultural land uses?
- Does the proposed project affect agricultural land designated by the FMMP?

For thresholds c, d, and e:

- Does the proposed project designate any area for forestry resources or timberland production?
- Would the project remove existing forestry resources as defined in the Public Resources Code?

Step 3: Apply Policies, Plans, and Programs

In addition to consulting the City's General Plan Conservation and Open Space Element, other resources may apply to the project site. The following regulations should be applied if they are enforced on the project site.

- Agricultural and forest land development restrictions in the Northern Sphere Area:
    - Consult the appropriate program EIR prepared for the Northern Sphere Area, PA 40, or Orange County Great Park for discussions of agriculture resources
    - Consult the program EIR prepared for the Northern Sphere Area, PA 8, PA 9, PA 12, and PA 40 for discussions of forestry resources
- The City's Conservation/Open Space Dedication Program
- Farmland Mapping and Monitoring Program
- Williamson Act Contract lands
- Orange County Central and Coastal Subregion Natural Community Conservation Plan
- City's Urban Forest Ordinance

Step 4: Determine Impact Significance

If it has been determined that there is potential for significant impacts to occur and there are no PPPs that would reduce the project impact, the resulting significance determination must be stated and substantiated. For agriculture and forestry resources, the following should be taken into account when making the significance determination:

- The project site may be used for agriculture or forest lands but not designated by the FMMP, Williamson Act contracts, the General Plan, or the Public Resources Code.
    - In this case, what is the proposed land use for this site?
    - Is this the site planned for development by the City's General Plan?
    - Would agriculture or forest resource production be consistent with this vision?

If the project site has already been designated for non-agriculture or non-forest land uses, the conversion of the project site would not be potentially significant if environmental analysis has been prepared previously.

Consultation with state agency departments and information is helpful in determining impacts to agriculture and forestry resources. In determining whether impacts to agriculture resources would be a significant environmental effect, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (LESA) (1997) prepared by the California Department of Conservation (CDC). This model determines the production and economic value of the agriculture land as an optional model to use in assessing impacts on agriculture and farmland, if deemed necessary (see "Methodology" for more information on how to complete the LESA model).

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 (CARB).

California Agricultural Land Evaluation and Site Assessment Model (LESA)

When required, methodologies for determining agriculture and forestry resource impacts may include the LESA model prepared by the CDC and the Forest Protocols adopted by CARB. More information on completing LESA is found on the CDC website at http://www.consrv. ca.gov/dlrp/Pages/qh_lesa.aspx. More information on completing Forest Protocols is found on the CARB website at http://www.arb.ca.gov/cc/forestry/ forestry_protocols/forestry_protocols.htm. Step 5: Formulate Mitigation

Agriculture Resources

As described previously, the City of Irvine has developed the Agricultural Legacy Program and open space programs, which fully mitigate for the effects of development within the City on agriculture resources. Land within the Agricultural Legacy Program will be permanently committed to agricultural production or in public ownership, so development pressure and land prices are not a factor. Sites in the Agricultural Legacy Program have been selected to minimize urban-agricultural interface problems, including vandalism. Though labor and irrigation costs are expected to remain high, this is not expected to affect the viability of the small-scale farming within the Agricultural Legacy Program because the main forces behind the conversion of farmland within the County-land costs, conflicts with adjacent uses, and development pressure-will not be a factor under the City's program.

Forestry Resources

The conversion of undeveloped open space to urban uses is specifically anticipated in the Irvine General Plan as a result of General Plan Amendment 16, which designated specific large areas to be preserved as permanent open space in accordance with the Conservation and Open Space Phased Dedications Districts program. In so doing, the growth anticipated in the General Plan will occur in areas that the City has determined to be suitable for development. The cumulative conversion of undeveloped land to urban uses resulting from implementation of approved and planned projects in the City would occur within the provisions of the Conservation and Open Space Phased Dedications Districts program. This program permanently protects forestry resources within the City of Irvine.

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

3.3 AIR QUALITY

The City of Irvine is within the South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (SCAQMD). SCAQMD is a "commenting agency" for development projects undergoing CEQA review. Projects within the City are subject to the rules and regulations adopted by SCAQMD; the California Air Resources Board (CARB), including the California Ambient Air Quality Standards (CAAQS); and the United States Environmental Protection Agency (USEPA), including the National Ambient Air Quality Standards (NAAQS).

3.3.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the set of significance thresholds for air quality impacts. A project would normally have a significant effect on the environment if the project would:

a. Conflict with or obstruct implementation of the applicable air quality plan.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

c. 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).

d. Expose sensitive receptors to substantial pollutant concentrations.

e. Create objectionable odors affecting a substantial number of people.

3.3.2 Determining Significance

General Approach

As SCAQMD, as a commenting agency, has adopted detailed guidance for addressing air quality impacts under CEQA. Therefore, the environmental impact analysis for air quality is based on the screening criteria and significance criteria developed by SCAQMD. The general approach and significance criteria identified by SCAQMD are described in this section.

Air pollutants of concern that may be generated by a project during its construction or operational phases can include:

> **Criteria Air Pollutants,** air pollutants for which ambient air quality standards (AAQS) have been established by the state or the USEPA.
>
> **Toxic Air Contaminants (TACs),** air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health.

SCAQMD first adopted guidelines for evaluating air quality impacts in 1993 in the CEQA Air Quality Handbook. Since adoption of the 1993 Handbook, SCAQMD has amended several chapters of the Handbook online: www.AQMD.gov/CEQA/hdbk.html. Air quality analyses conducted in the City of

AIR QUALITY

Irvine adhere to SCAQMD's guidelines. Applicable guidelines for air quality assessments for development projects are shown in Table 3.3-1.

Table 3.3-1
Guidelines for Assessing Air Quality Impacts of Development Projects

Type	*Guidance*
General Guidance	• SCAQMD. 1993. CEQA Air Quality Handbook. • SCAQMD. Air Quality Analysis Guidance Handbook. http://www.aqmd.gov/ceqa/hdbk.html
Localized Significance	• SCAQMD. 2011. Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. • SCAQMD. 2008, July (Revised). Final Localized Significance Threshold Methodology. • SCAQMD. 2008, July (Revised). Final Localized Significance Threshold Methodology, Appendix C – Mass Rate LST Look-up Tables. • SCAQMD 2005. Sample Construction Scenarios for Projects Less than Five Acres in Size.
Health Risk Assessment	• SCAQMD. 2003, August. Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis.
Air Quality Compatibility	• CARB. 2005. Air Quality Land Use Compatibility Handbook. • CAPCOA. 2009, August. Health Risk Assessments for Proposed Land Use Projects.

Step 1: Determine the Existing Conditions

The existing conditions section should include a discussion on the existing ambient air quality environment and applicable regulations for criteria air pollutants and toxic air contaminants. Air quality analyses conducted within the City of Irvine are required to adhere to SCAQMD's guidelines (1993 Handbook and updates available at www.AQMD.gov/CEQA/hdbk.html).

Modeling Tools

A list of modeling tools is available on SCAQMD's website: http://www.aqmd.gov/ceqa/models.html. There are several generally accepted models for use in California to identify criteria air pollutant emissions from development projects.[1] The most commonly used models for development projects are

[1] Current models used include CalEEMod and URBEMIS2007, which were developed for SCAQMD. SCAQMD also allows use of the Sacramento Metropolitan Air Quality Management District's Roadway Construction Emission Model and models accepted by CARB and the USEPA. Onroad and offroad emission factors within CARB's EMFAC and OFFROAD models are available at CARB's website: www.arb.ca.gov. Common dispersion modeling

URBEMIS2007 and CalEEMod, which were both developed for SCAQMD. While both models are still accepted as of 2011, it is recommended that future development projects use the latest model available for use when conducting their CEQA evaluation. Therefore, CalEEMod should be used for most development projects in the City of Irvine.

Step 2: Project Impacts

Project impacts are based on the following significance criteria adopted by SCAQMD: Regional Significance Thresholds

The SCAQMD has established thresholds of significance for air quality for construction activities and project operation. The current regional significance thresholds are shown in Table 3.3-2.

Table 3.3-2
SCAQMD Regional Significance Thresholds

Air Pollutant	*Construction Phase*	*Operational Phase*
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 projects.

Construction Phase

The CalEEMod and URBEMIS2007 models estimate emissions from construction activities based on typical construction equipment mix and construction duration. These estimates were based on surveys of construction sites conducted by SCAQMD. However, if more accurate estimates of construction equipment mix and construction duration are available from the applicant, modeling should be tailored to include project-specific information. In addition, SCAQMD has adopted Rule 403, Fugitive Dust Control. Air quality modeling should be tailored to include reductions from compliance with SCAQMD's Rule 403 during construction activities.

Operational Phase

Emissions generated by a project during its operational phase may include emissions from stationary/area (e.g., off-gas emissions from painting, landscape equipment, and fireplaces) and transportation sources. The CalEEMod program also calculates indirect emissions from purchased energy use[2] and direct emissions from natural gas consumption (e.g., stoves and heaters). SCAQMD has adopted Rule 445, Wood-Burning Devices, which prohibits the use of woodstoves and fireplaces in the City of Irvine. Consequently, modeling should assume use of gas fireplaces if included in a project. The CalEEMod and

tools accepted for use for development (non-permit) projects include HARP, SCREEN3, ISCST3, AERMOD, and Caline4.
[2] The CalEEMod program calculates greenhouse gas emissions from purchased electricity based on the carbon intensity of electricity production for the energy provider, which is Southern California Edison for the City of Irvine.

URBEMIS models provide an estimate of daily vehicle trip generation, percent pass-by trips, and percent diverted trips based on the Institute for Transportation Engineer's (ITE) Trip Generation Manual. While an estimate of daily trips and vehicle miles traveled (VMT) is provided, the model should be tailored to include project-specific information if a traffic study was prepared for the project.

Localized Significance Thresholds (Onsite)

SCAQMD has developed localized significance thresholds (LSTs) for emissions of nitrogen dioxide (NO_2), carbon dioxide (CO), and particulate matter (PM_{10}, and $PM_{2.5}$) generated at a project site. (Offsite 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 CAAQS or NAAQS. Screening criteria have been developed for project sites smaller than five acres (see www.AQMD.gov/CEQA/hdbk.html). Projects larger than five acres or that disturb more than five acres during construction can determine the significance of these emissions by performing dispersion modeling using the thresholds in Table 3.3-3 for emissions that exceed the screening-level (five acre) LSTs.

Table 3.3-3
SCAQMD Localized Significance Thresholds

Air Pollutant Standard (Relevant AAQS)	*Concentration*
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/m^3 = micrograms per cubic meter
[1] Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an "allowable change" in concentration. Therefore, background concentration is irrelevant.

Localized Impacts – CO Hotspots (Offsite)

The 1993 CEQA Air Quality Handbook includes methodology to conduct localized CO modeling for traffic generated by a project. At the time of the 1993 Handbook, the SoCAB was designated as nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined. In 2007, the SCAQMD was designated in attainment for CO under both the CAAQS and NAAQS.[3]

[3] Peak carbon monoxide concentrations in the SoCAB were a result of unusual meteorological and topographical conditions, and not a result of congestion at a particular intersection (SCAQMD 1992, SCAQMD 2003). A CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods and did not predict a violation of CO standards. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000

Odor Impacts

SCAQMD defines odor impacts as projects that generate an odor nuisance under SCAQMD Rule 402. Facilities that have the potential to generate odor impacts include:

- Wastewater Treatment Plants
- Wastewater Pumping Facilities
- Landfills
- Transfer Stations
- Composting and Greenwaste Recycling Facilities
- Asphalt Batch Plants
- Chemical Manufacturing
- Fiberglass Manufacturing
- Painting/Coating Operations
- Food Processing Facilities

Project applicants siting new odor-generating facilities or placing sensitive land uses near facilities that generate substantial odors should consider the potential for odor impacts under Rule 402.

Health Risk

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 Assembly Bill (SB) 1807, or placed on the USEPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the SCAQMD. Table 3.3-4 lists the SCAQMD's TAC incremental risk thresholds for operation of a project. Residential, commercial, and office uses do not emit substantial quantities of TACs and these thresholds are typically applied for new industrial projects.

Table 3.3-4
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

Consistency with the AQMP

Review of project compliance with the SCAQMD AQMP gives the lead agency information for determining how individual projects fit into the local planning effort; informs decision makers about project-related environmental efforts under consideration at an early enough stage to ensure that air quality concerns are fully addressed; and ensures project compliance with clean air goals contained in the AQMP. Pursuant to the 1993 Handbook, a project would be inconsistent with the AQMP if it would:

vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2009). Because this scenario is unlikely since intersections cannot accommodate this volume of traffic in a one-hour period, CO hotspot modeling is typically not warranted for development projects within the City.

- Contribute to an increase in frequency or severity of air quality violations; or

- Delay attainment of the California or National AAQS.

For land use development projects, a consistency analysis with the AQMP starts with an evaluation of the land use designations onsite. The regional emissions inventory for the SoCAB is compiled by the SCAQMD and the Southern California Association of Governments (SCAG). Regional population, housing, and employment projections developed by SCAG are based, in part, on the City's General Plan land use designations. The emissions inventory in the AQMP is based on these projections. These demographic trends are incorporated into the Regional Transportation Plan, compiled by SCAG, to determine priority transportation projects and determine VMT within the SCAG region. Project-related changes in the existing population, housing, or employment growth projections may affect SCAG's demographic projections and consequently the assumptions in SCAQMD's AQMP.

The consistency evaluation should include the following tiered screening approach:

- Tier 1: Is the project consistent with the General Plan land use designation? If yes, the project is consistent with the AQMP; if no, proceed to Tier 2.

- Tier 2: Is the project a regionally significant project under SCAG's intergovernmental review criteria that could exceed regional employment, population, and housing projections within the region? If no, the project is consistent with the AQMP. This is because only projects that result in macro-level shifts in employment, population, or housing have the potential to alter the demographic projections of SCAG. If yes, proceed to Tier 3.

- Tier 3: Does the project generate emissions that exceed the SCAQMD regional or localized significance thresholds? If yes, the project would be inconsistent with the AQMP; if no, the project is consistent with the AQMP.

Community Health Risk/Air Quality Compatibility

Overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics is about 1,200 in a million in the SoCAB. Mobile sources account for approximately 94 percent of all health risk in the SoCAB, and stationary sources (industries, dry cleaners, chrome-plating operations, etc.) account for the remaining 6 percent of the risk. The largest contributor to this risk is diesel exhaust, accounting for approximately 84 percent of the total air toxics risk (SCAQMD 2008).

Recent air pollution studies have shown an association between proximity to major air pollution sources and a variety of health effects, which are attributed to a high concentration of air pollutants. Because sensitive land uses fall outside CARB jurisdiction, CARB developed and approved the Air Quality and Land Use Handbook: A Community Health Perspective in May 2005 to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed as a tool for assessing compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB siting recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

CARB's recommendations on the siting of new sensitive land uses were developed from a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that close proximity to air pollution sources substantially increases exposure and the potential for adverse health effects relative to the existing background concentrations in the air basin. However, the impact of air pollution from these sources is on a gradient that at some point becomes indistinguishable from the regional air pollution problem. To assist lead agencies in complying with addressing air quality compatibility under CEQA, the California Air Pollution Control Officer's Association (CAPCOA) released the Health Risk Assessment for Proposed Land Use Project (CAPCOA 2009), which is based on CARB's siting recommendations (see Table 3.3-5).

Table 3.3-5
CARB Recommendations for Siting New Sensitive Land Uses

Source Category	*Advisory Recommendations*
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units [TRUs] per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or CARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Source: CARB 2005.

Certain areas of the City are likely to have a higher concentration of industrial land uses that emit TACs, such as the Irvine Business Complex and Irvine Spectrum. In addition, several roadways/freeways traverse the City that have traffic volumes larger than 100,000 vehicles per day, including the San Diego (I-405) Freeway, Santa Ana (I-5) Freeway, and the Laguna (SR-133) Freeway. Figure 3.3-1 identifies locations within the City where additional analysis for air quality compatibility may be warranted based on CARB's recommendations.

While SCAQMD has adopted significance thresholds for projects that generate new sources of TACs, SCAQMD has not yet adopted guidelines for evaluating projects that place sensitive land uses proximate to major sources of TACs. It is recommended that if a sensitive land use will be located within the CARB recommended buffer distances (e.g., 500 feet from a roadway), the air quality analysis should evaluate applicable stationary and mobile sources for the potential cancer and non-cancer risks based on the current methodology of SCAQMD (see Figure 3.3-1, *Air Quality Buffer Zones*).

Step 3: Apply Plans, Policies, and Programs

The City of Irvine lists the PPPs in each topical section of an EIR, usually preceding or at the start of the impact analysis section. The PPPs include local, state, and federal regulations, including the City's Standard Conditions of Approval. PPPs may reduce the level of impact significance and would preclude the need for additional analysis. This must be substantiated in the environmental analysis.

Step 4: Determine Impact Significance

Once it has been determined that a project impact exceeds the significance criteria and existing PPPs are not able to reduce the significance, these impacts are potentially significant. In some cases, an impact may not be significant if it is consistent with the general plan, the City's vision for the area, or other existing plans or guidelines for the project site. Significance conclusions must be substantiated in the analysis.

Step 5: Formulate Mitigation

For air quality, mitigation measures are usually based on the technical analysis. Appendix D lists sample mitigation measures for air quality. SCAQMD has also developed a list of standard mitigation measures and control efficiencies, which is available at:

http://www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html.

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding Considerations if it chooses to approve a project despite such significant and unavoidable impacts.

Air Quality Buffer Zones

LEGEND

- General Industrial Zone
- 500-Foot Buffer
- 1,000-Foot Buffer
- City of Irvine Boundary
- City of Irvine Sphere of Influence

0 3
Scale (Miles)

Source: SCAG 2007; SCAG 2008; City of Irvine 2011

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3.4 BIOLOGICAL RESOURCES

While many of the landforms within the City have been developed and altered, there are significant portions that have retained their natural biotic character, including the Santiago Hills and San Joaquin Hills. A summary of the biotic communities existing within the City and their statuses (disturbed/undisturbed) is presented in Table 3.4-1.

Table 3.4-1
Landforms Within Irvine and their Biota

Landform	Status	Existing Biota
Santiago Hills	Undisturbed	Freshwater marsh, coastal sage scrub, oak woodland, and grassland
Northern Flatlands	Disturbed	Farmland/rural, urban
Central Flatlands	Mostly Disturbed-Some Undisturbed Areas	Farmland/rural, urban, and riparian (Planning Areas 12 and 13)
San Joaquin Hills	Partially Disturbed	Freshwater marsh, coastal sage scrub, oak woodland, grassland

The City of Irvine contains several water features, both natural and man-made, that serve as habitats for various fish and bird species. These include, but are not limited to, those presented in Table 3.4-2.

Table 3.4-2
Water Features Serving as Habitats for Fish and Bird Species

Type of Water Feature	Examples Existing in Irvine
Creek	San Diego Creek,
Wash	Agua Chignon Wash, Bee Canyon Wash, Borrego Canyon Wash, Hicks Canyon Wash, Peters Canyon Wash, Sand Canyon Wash
Marsh	San Joaquin Freshwater Marsh
Lake	Woodbridge Lakes, William R. Mason Regional Park Lakes (man-made)

Relevant Planning Programs

Continued preservation of large contiguous habitat areas is the key to preserving biodiversity and avoiding additional species becoming rare, endangered or extinct. Open space areas in the City of Irvine, which include preservation areas, recreation areas, water bodies, agricultural areas, golf courses, and landfills, are shown in Figure 3.4-1, *Open Space Areas in the City of Irvine*. The majority of biological habitat is found in the preservation areas. Federal and State laws and adopted County policies require the protection of natural habitats and associated wildlife and vegetation in recognition of their many values. The City of Irvine also has local requirements for development in the City's Municipal Code that prevent

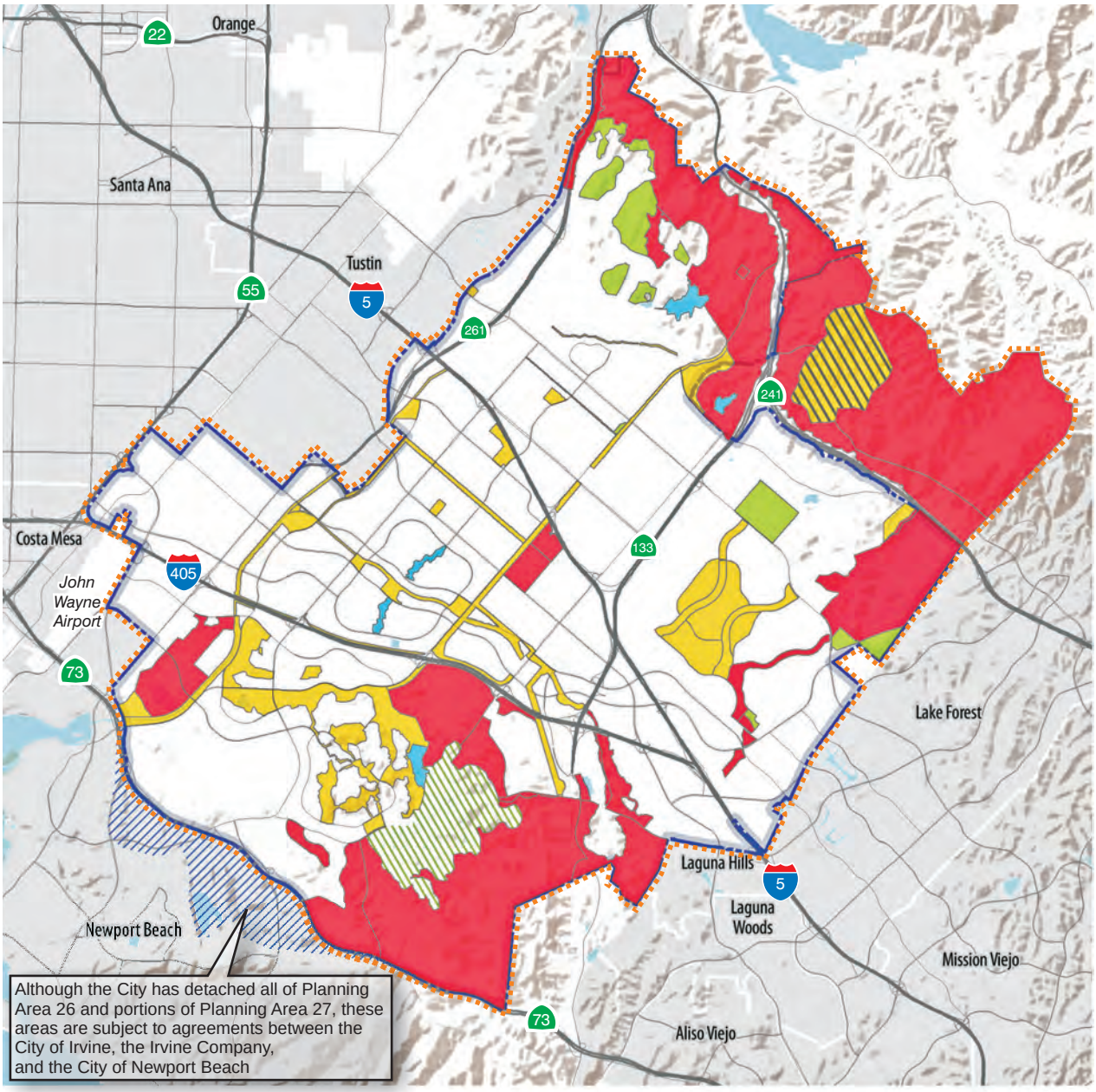
damage or harm to local biological resources. Some examples include the City's Urban Forestry Ordinance (Municipal Code Title 5, Division 7, Chapter 4), which requires a permit to remove any significant tree on public or private land, and the guidelines for noise compatibility with wildlife habitat. Various conservation plans and natural habitat protection areas exist throughout the City (see Table 3.4-3).

Table 3.4-3
Biological Resource Plans that Affect Irvine

Name	*Involved Parties*	*History*	*Purpose/Goal*	*Implications*
Orange County Central and Coastal Natural Community Conservation Plan	County of Orange, CA Department of Fish and Game, US Fish and Wildlife Service, Orange County Cities	In May of 1996, the City of Irvine, the County of Orange, various other cities, and landowners entered into an agreement to place certain lands within the NCCP Reserve and commit to certain responsibilities under this plan.	Preservation of entire biotic communities	The majority of the northeastern part of the City is part of the NCCP. Additional NCCP reserve lands also exist in other parts of the City (see Figure 3.4-1). Development is limited within the NCCP areas to "Covered Activities" and compatible uses. All proposals for development that are within the NCCP are required to meet these requirements and would be reviewed by the City prior to approval.
Local Coastal Program	Coastal Commission, Orange County Cities	Under the California Coastal Act, "environmentally sensitive area" denotes any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments	Protection of water quality and the biological productivity of coastal waters; avoidance and minimization of dredging, diking, and filling sediments; and mitigation of wetland impacts.	Implementation of Coastal Act policies are accomplished primarily through the preparation of a Local Coastal Program (LCP). The LCP is typically prepared and adopted by a municipality or county, and then reviewed and approved by the Coastal Commission.

The California Natural Community Database (CNDDB), administered by the California Department of Fish and Game, records citations of special status species, organized by 7.5 minute quadrangle. The City of Irvine is in and/or adjacent to the Newport Beach, Tustin, Orange, Black Star Canyon, El Toro, San Juan Capistrano, and Laguna Beach quadrangles.

Open Space Areas in the City of Irvine



LEGEND

- 1400-Preservation
- 1500-Recreation
- 1600-Water Bodies
- 1100-Agriculture
- City of Irvine Boundary
- Landfill Overlay
- Golf Course Overlay
- PA26
- City of Irvine Sphere of Influence

0 2
Scale (Miles)

Source: City of Irvine 2012

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Natural Community Conservation Plan/Habitat Conservation Plan

The City of Irvine is located within the boundaries of Orange County's Central-Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), as shown in Figure 3.4-2, *Orange County Central and Coastal Subregion NCCP within Irvine City Boundaries*. Preparation of NCCPs was authorized by the Natural Community Conservation Act, California Fish and Game Code §§2800–2840 (NCCP Act), which was signed into law in 1991. The Reserve areas, as well as areas identified for development, are identified in the NCCP/HCP. The NCCP/HCP is a state program designed to protect critical habitat through a comprehensive management and conservation program while at the same time providing for reasonable economic development. The NCCP Act is designed to protect important habitat before it becomes necessary to declare certain species that use that habitat as endangered. It provides an alternative to protecting species on a "single species basis" as with the Federal Endangered Species Act (FESA) (16 U.S.C. §1531 et seq.) and the California Endangered Species Act (CESA) (Fish and Game Code §2050, et seq.). Under the NCCP Act, the California Department of Fish and Game (CDFG) is responsible for implementing process planning and conservation guidelines for NCCP programs.

In 1982, FESA was amended to give private landowners the ability to develop Habitat Conservation Plans (HCP) pursuant to Section 10(a) of FESA. Upon development of an HCP, the U.S. Fish and Wildlife Service (USFWS) can issue incidental-take permits for listed species where the HCP specifies, at minimum, the following: (1) the level of impact that will result from the taking, (2) steps that will minimize and mitigate the impacts, (3) funding necessary to implement the plan, (4) alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) such other measures that the Secretary of the Interior may require as being necessary or appropriate for the plan.

In 1996, an Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Orange County Central-Coastal Subregion NCCP/HCP was prepared with the County of Orange and the USFWS as lead agencies, and the CDFG as a responsible agency. Based on the Central-Coastal NCCP/HCP, the USFWS and the CDFG authorized "take" of "Identified Species" and approved modification of "Covered Habitats" under the state and federal ESAs and the federal Migratory Bird Treaty Act (MBTA). Following certification of the EIR/EIS, the participating agencies and landowners, including the City and The Irvine Company, signed an Implementation Agreement (IA). The IA set forth the implementation requirements for the Central-Coastal NCCP/HCP, including requirements related to dedication, creation, and management of a 37,000-acre Nature Reserve System (Reserve), as well as procedures and minimization measures related to take of Identified Species and modification of habitat in areas designated for development.

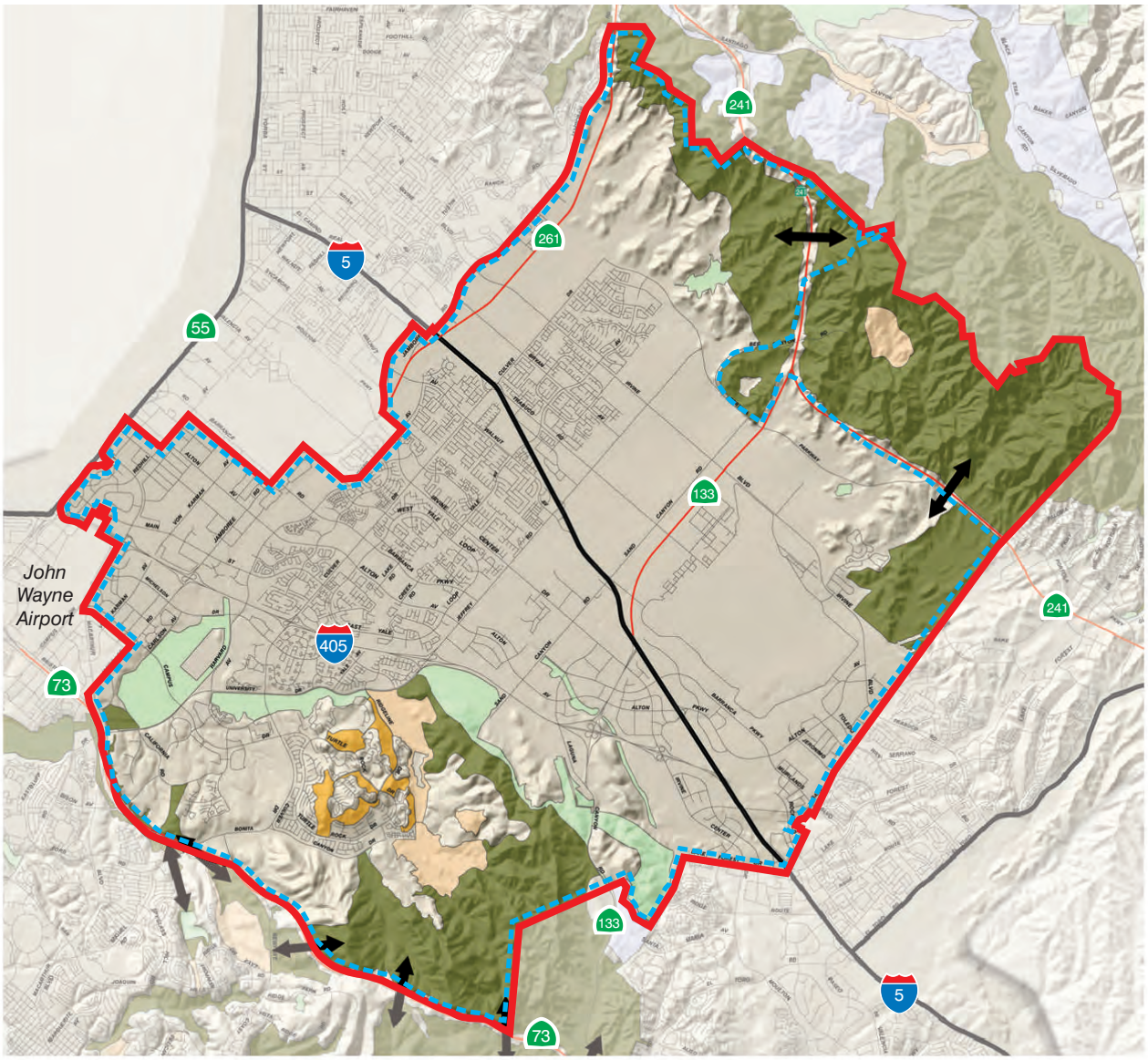
Under the Central-Coastal NCCP/HCP, it was determined that the Reserve design incorporated sufficiently large habitat areas and connectivity for purposes of wildlife movement that impacts of development within development areas designated by the NCCP/HCP do not require further mitigation. It was also determined that the Reserve design adequately addressed buffer and edge considerations, and impacts of development within designated development areas do not require further mitigation.

Initiative Resolution 88-1 and General Plan Amendment 16

Irvine Ballot Measure C integrated the land use and conservation and open space elements together through the development entitlement process with a purpose of providing permanent protection of open space by means of public ownership. When this program, known as the "Implementation Action

Program," is complete, all major open space preservation areas (whether under the ownership of The Irvine Company or its successor or not) are required to assure the appropriate balance of development and open space. The development areas, preservation areas, and spines, which connect preservation areas, of the Implementation Action Program are shown on Figure 3.4-3, *Irvine Preservation Areas*. Pursuant to the NCCP/HCP, no additional mitigation is required of participating land owners for impacts to identified species and their habitat or for species residing in non-CSS habitats (i.e., covered habitats). Non-participating land owners may mitigate impacts to biological resources by (1) onsite avoidance of Take; (2) satisfaction of the applicable FESA or CESA provisions under the consultation and permit provisions of these statutes; or (3) payment of a Mitigation Fee to the non-profit management corporation as provided for in the NCCP/HCP and Implementation Agreement.

Orange County Central and Coastal Subregion NCCP within Irvine City Boundaries



LEGEND

- Reserve
- Existing Use
- Conservation Easement
- Special Linkage
- Non-Reserve Open Space
- City of Irvine Sphere of Influence
- City of Irvine Boundary
- Transportation Corridor Wildlife Crossing

Existing Use: Existing Use Areas designated in the NCCP/HCP include areas located on lands owned by non-participating landowners. No additional restrictions on existing landowner uses or additional regulation/management by local governments would be required unless a change in existing land use is proposed.

0 3
Scale (Miles)

Source: County of Orange, Planning & Development Services (PDS).

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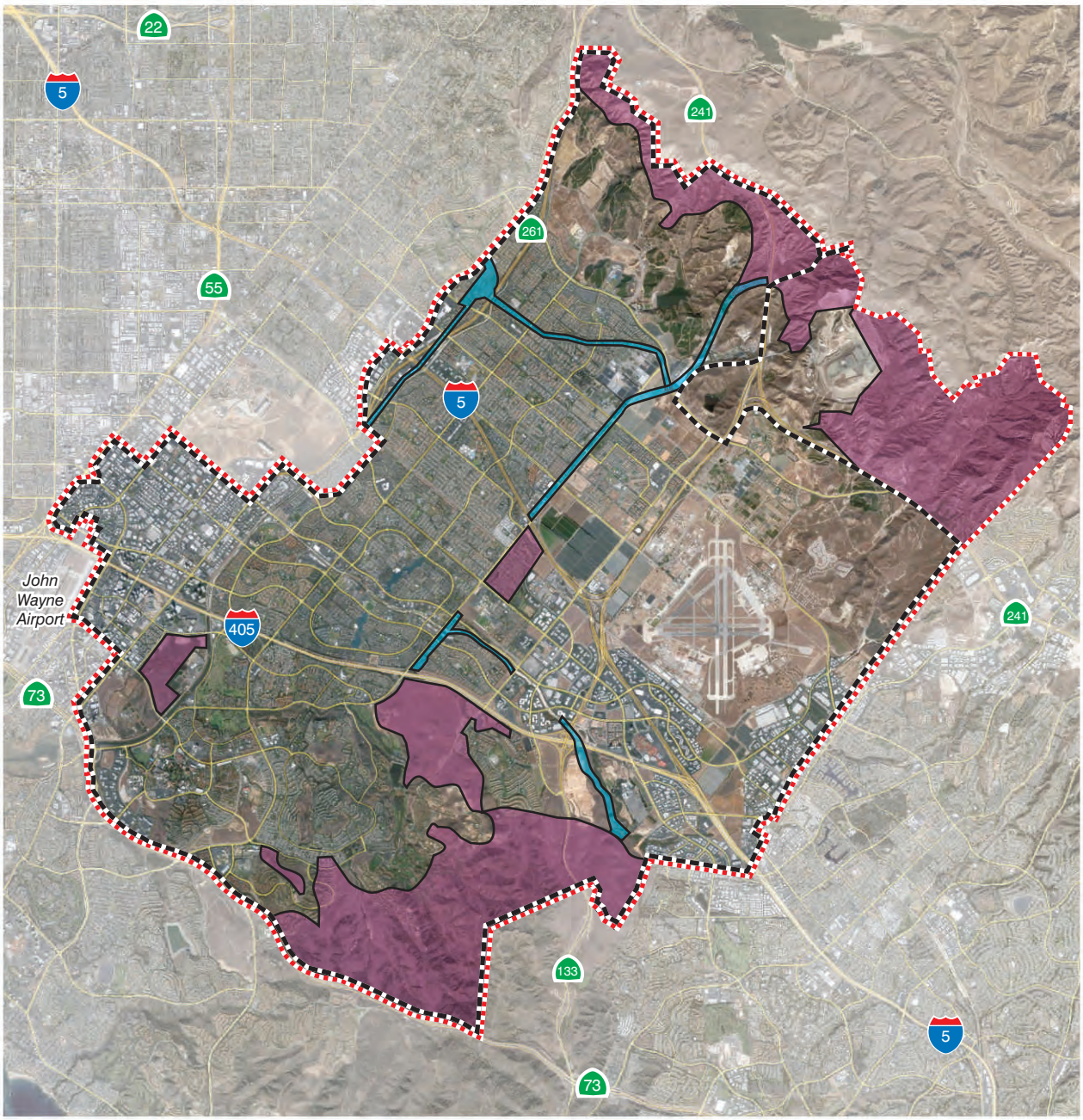
Irvine Preservation Areas



LEGEND

Preservation Area

Spine Area

No Color Development Area

City of Irvine Boundary

City of Irvine Sphere of Influence

0 3
Scale (Miles)

Source: Irvine 2006

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3.4.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for biological resources. A project would normally have a significant effect on the environment if the project would:

a. Have a substantial 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.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

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.

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.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

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.

3.4.2 Determining Significance

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The biological resources environmental analysis should look at the questions provided in this flow chart. Additional questions that pertain specifically to biological resources are provided under each step of the "General Approach for Environmental Analysis" flow chart.

Step 1: Determine the Existing Conditions

The existing setting section of biological resources analysis should describe the existing natural character of the project site. It should take into account waterways, vegetation, and habitat.

- Is the project site developed or vacant? If it is vacant, is it vegetated?

- Does the site have habitat used by native species in the area, or, do native species exist onsite? (Reference existing CEQA documents or biological studies for the area if available.)

- Is the site planned for development by Orange County's Central-Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP)?

BIOLOGICAL RESOURCES

Step 2: Project Impacts

Once a project description has been established for a proposed project, the potential for biological resource impacts to occur can be determined. The potential for impacts is based on the following questions, provided to supplement the questions under Step 2 of the "General Approach for Determining Significance Flow Chart" in Chapter 1.

- If the site has biological resources on the project site, would the proposed development affect these resources through either construction or operational activities?

- Does the proposed project require the approval of permits by California Department of Fish and Game, United States Fish and Wildlife Service, or the Santa Ana Regional Water Quality Control Board?

Step 3: Apply Plans, Policies, and Programs

Appendix C summarizes the PPPs for the City of Irvine. There are a number of standard conditions, municipal and zoning code requirements, and state or federal regulations that projects must follow in the City of Irvine. Any site disturbance that affects biological habitat must obtain written clearance from the jurisdictional agency, and approval by the Community Development Director, prior to the issuance of grading permits.

Step 4: Determine Impact Significance

If the application of PPPs does not reduce potentially significant biological resource impacts, the remaining impacts are potentially significant.

Step 5: Formulate Mitigation

Mitigation measures for biological resources are included in the Implementation Program for Orange County's Central-Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Additional mitigation measures, if necessary, should follow the requirements laid out in the "General Approach for Environmental Analysis" flow chart in Chapter 1.

Step 6: Determine Significance after Mitigation

As described in the flow chart in Chapter 1, a determination of project impacts after all mitigation measures, PPPs, Standard Conditions of Approval, and other restrictions and regulations have been implemented should be made. Any remaining significant and unavoidable impacts shall be identified. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

3.5 CULTURAL RESOURCES

The cultural resources analysis per CEQA is broken into three categories: historic resources; archaeological resources, and; paleontological resources.

For the purposes of CEQA analysis historical, archaeological, and paleontological resources are defined in Table 3.5-1.

Table 3.5-1
Types of Cultural Resources and Definitions

Historical	Buildings, objects, structures, areas, sites that are historically important as defined by Section 15064.5 of the State CEQA Guidelines.
Archaeological	Artifacts, structural remains, and human remains belonging to an era of prehistory.
Paleontological	Fossilized geological materials, such as rock and mineral deposits, which represent a past geological era and may yield fossilized remains of past animal and plants.

Historical Resources

Historical resources must meet the criteria defined in §15064.5 of the CCR in order to be considered significant resources. Per CEQA, historic resources are defined as:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4850 et seq.).

(2) A resource included in a local register of historical resources or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4852) including the following:

(A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Is associated with the lives of persons important in our past;

(C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(D) Has yielded, or may be likely to yield, information important in prehistory or history.

(4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

Resources that are identified in the City of Irvine as having historic significance are shown in Figure 3.5-1, *Historic Sites*. There are only two sites that are currently listed on the California Inventory of Historic Resources, Barton Mound, south of Interstate 405 and east of State Route 133, and the Portola Campsite at Tomato Springs, south of State Route 241 and north of Portola Parkway, in northeast Irvine. However, other historic sites, as listed on Table 3.5-2, may qualify to be listed and should be considered to be potential historic resources.

Table 3.5-2
Potential Historic Resources in Irvine

Map ID	Site Name	Location	Condition	Historic Register?
1	Red Hill Stage Stop	Southwest of Jamboree Road and Portola Parkway	Former Site	No
2	The Sinks	Limestone Canyon Wilderness Park	Natural Landform	No
3	Tomato Springs Bandit	Northeast of Portola Springs and Portola Parkway	Existing Site	No
4	Portola Campsite	Along Portola Parkway south of SR-241	Existing Site	CHRI
5	Route of the Portola Expedition	Generally follows Portola Parkway	Former Site	No
6	Valencia Growers	Jamboree Road, north of Irvine Boulevard (Valencia Park)	Former Site	No
7	Coach Station Adobe Stage	Southwest of Jeffrey Road and Irvine Boulevard	Former Site	No
8	Irvine Walnut House	East of Culver Drive, between Irvine Boulevard and Bryan Avenue	Former Site	No
9	Southern Pacific Railroad End of Line	I-5 at Jamboree Road	Former Site	No
10	San Joaquin Fruit Company	Yale Avenue (Northwood Community Park)	Former Site	No
11	Swamp of the Frogs	Edinger Ave, between Red Hill Avenue and Yale Avenue	Former Natural Landform	No
12	Irvine Laguna Stage Coach Stand	Southeast of Sand Canyon Avenue and I-5	Former Site	No
13	Jose Sepulveda's First House	Michelson Drive and Harvard Avenue near San Joaquin Marsh	Existing Site	No
14	San Joaquin Rancho Headquarters	Irvine Historical Society	Existing Site	No
15	Turtle Rock	Turtle Rock Drive and Concordia	Natural Landform	No
16	Barton's Mound	South of I-405 and east of SR-133	Natural Landform	CHRI

Source: Irvine 2004
CHRI = California Historic Resources Inventory

Archaeological Resources

The largest concentrations of archaeological sites in the City of Irvine exist in the Upper Newport Bay and the Santiago and San Joaquin Hills. The majority of archaeological resources in the City of Irvine reflect the historical settlements and activities of the Tongva people (also known as the Gabrielinos), who began occupying the area approximately 3,000 years ago. Archaeological resources can be found whenever a proposed project involves ground disturbance in areas that have previously been undisturbed or where ground disturbance would penetrate deeper into the ground than previous work.

Senate Bill 18 Tribal Consultation

California Senate Bill (SB) 18 (Burton, D-San Francisco) helps tribes and jurisdictions define resources and sacred areas and incorporates protection of these places into the General Plan process. It is the first law in the nation to mandate tribal consultation at the local level. SB 18 consultation applies to the

adoption and amendment of General Plans proposed on or after March 1, 2005. SB 18 consultation is a "government to government" interaction between tribal representatives and representatives of the local jurisdiction.

SB 18 Consultation Process:

- Once a local government initiates a proposal to adopt or amend a General Plan, the local government must send a written request to the NAHC asking for a list of tribes to consult.
  - Requests should clearly state that the local government is seeking information about tribes that are on the "SB 18 Tribal Consultation List."

- The NAHC is mandated to provide local governments with a written contact list of tribes in the local government's jurisdiction in 30 days.

Since the majority of development in the City of Irvine is within an existing planning area, there would be few development proposals that would require SB 18 consultation. However, a project that requires a General Plan amendment would trigger SB 18 consultation.

Paleontological Resources

The City of Irvine is divided into paleontological zones according to the likelihood of occurrence of important paleontological resources. The City's General Plan contains a map that outlines these separate zones as having low, medium, and high sensitivity (Irvine General Plan Figure E-2, *Paleontological Sensitivity Zones*). The San Joaquin Hills and the Santiago Hills tend to have higher richness in paleontological resources.

Although it is more likely to encounter paleontological resources in areas with medium to high sensitivity, they may be found anywhere in the City. Construction activities that involve ground disturbance have the potential to disturb, destroy, or negatively affect paleontological resources. As with archaeological resources, the City requires a paleontologist and/or archaeologist to be on call during ground disturbing activities when there is potential for resources to be uncovered. The arrangements for the paleontologist and/or archaeologist to be available for consultation must be completed prior to the first preliminary or precise grading permit is issued by the City (Standard Condition 2.5, see Appendix C of these Guidelines).

3.5.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for cultural resource impacts. A project would normally have a significant effect on the environment if the project would:

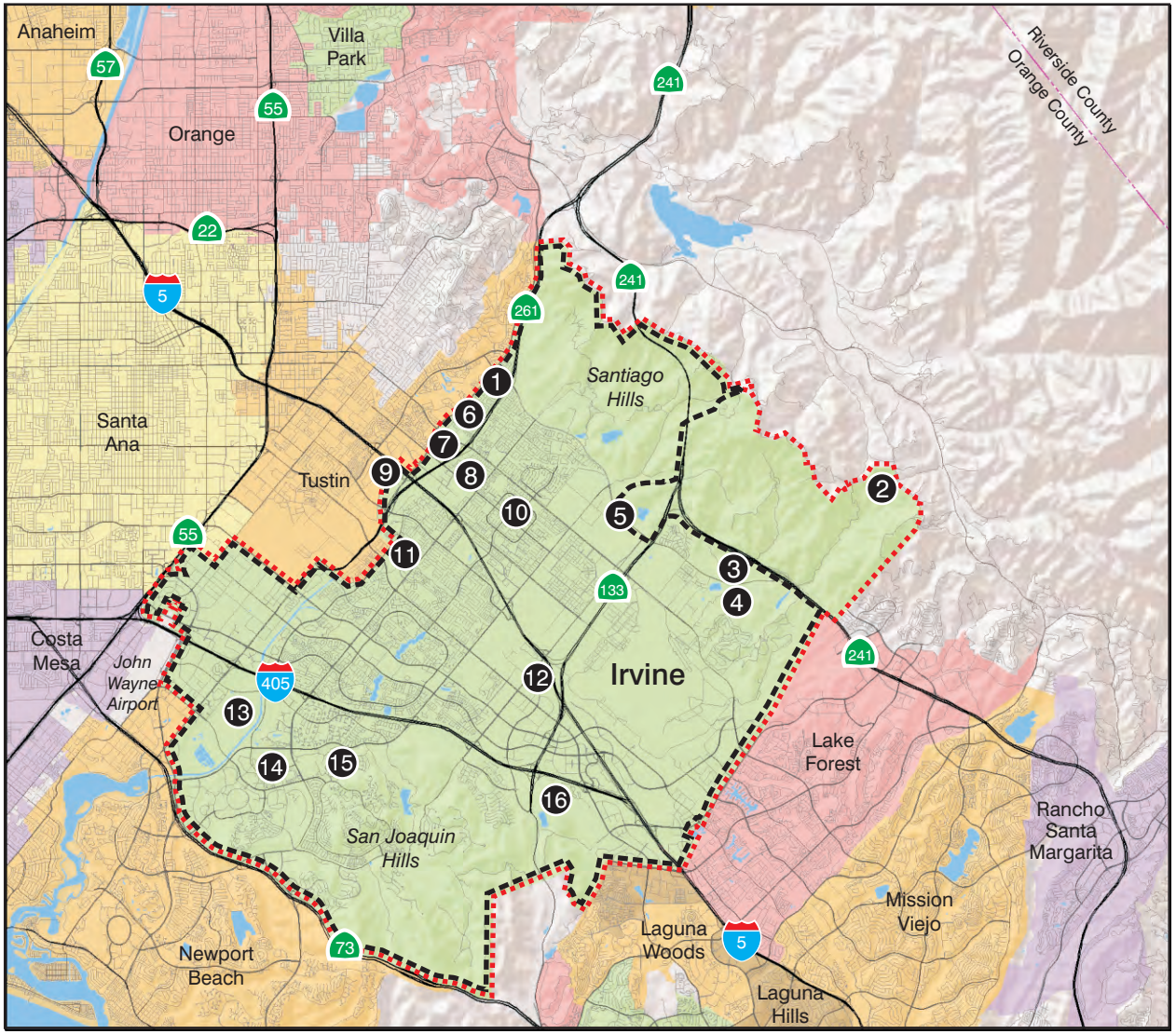
- Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

- Disturb any human remains, including those interred outside of formal cemeteries.

Historic Sites in Irvine



LEGEND

1. Red Hill Stage Stop
2. The Sinks
3. Tomato Springs Bandit
4. Portola Campsite
5. Route of Portola Expedition
6. Valencia Growers
7. Coach Station Adobe Stage
8. Irvine Walnut House
9. Southern Pacific Railroad End of Line
10. San Joaquin Fruit Company
11. Swamp of the Frogs
12. Irvine Laguna Stage
13. Jose Sepulveda's First Home
14. San Joaquin Rancho Headquarters
15. Turtle Rock
16. Barton's Mound

City of Irvine Boundary

City of Irvine Sphere of Influence

0 15,000
Scale (Feet)

Source: City of Irvine General Plan

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3.5.2 Determining Significance

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The cultural resources environmental analysis should look at the questions provided in this flow chart. Additional questions that pertain specifically to cultural resources are provided under each step of the "General Approach for Environmental Analysis" flow chart.

Step 1: Determine the Existing Conditions

The existing setting section of cultural resources analysis should include a description of any known historic, archaeological, or paleontological resources on or near the project site. It should also provide a brief history of the site and area, including a description of any previous cultural studies that have been completed on or near the site. The following questions are meant to help focus the existing setting discussion for cultural resources.

- Is the proposed project on or near a site that contains a historic resource, as defined by §15064.5 of the CCR or on Table 3.5-2?

- Is the project site within a paleontological sensitivity zone as identified in Irvine General Plan Figure E-2?

- What cultural studies have been previously been completed for the project site or the surrounding area? Consult the environmental documentation and supporting cultural resource studies (if available) that have been completed for the planning area in which the project site is located.

Step 2: Project Impacts

Once a project description has been established for a proposed project, the potential for impacts to cultural resources to occur can be determined. The potential for impacts is based on the following questions, provided to supplement the questions under Step 2 of the "General Approach for Determining Significance Flow Chart" in Chapter 1.

- If the site has archaeological or paleontological resources as identified previously on the project site), would the proposed project involve ground disturbance that affects these resources?

- Does the proposed project require the disturbance of a historic resource?

Step 3: Apply Plans, Policies, and Programs

- The City requires a paleontologist and/or archaeologist to be on call during ground disturbing activities when there is potential for resources to be uncovered. The arrangements for the paleontologist and/or archaeologist to be available for consultation must be completed prior to the first preliminary or precise grading permit is issued by the City (Standard Condition 2.5). Consult Appendix C for additional PPPs applicable to cultural resources.

CULTURAL RESOURCES

Step 4: Determine Impact Significance

If cultural, paleontological, or historical resources are on the project site, the level of significance of the impact to the resource is dependent on:

- the location of the resource in relation to proposed site disturbance
- the importance of the resource to local and regional history

Typically, when it has been determined that there is a potential for resources to exist onsite, a cultural resources study is prepared, which contains technical analysis of archaeological, paleontological, and/or historic resources. This study can help determine the significance of impacts. Also, any CEQA documents and cultural reports that currently exist for the planning area in which the project is located can also help determine the level of significance to a cultural resource.

Step 5: Formulate Mitigation

Mitigation measures to reduce cultural resource impacts either require the removal of the cultural resource from the project site, when possible, complete avoidance of the resource, documentation of the cultural resource, or incorporation of the resource into the proposed project. Although not included as a mitigation measure, during construction, a paleontologist or archaeologist must always be on call, as required by the City (Standard Condition 2.5).

Step 6: Determine Significance after Mitigation

As described in the flow chart in Chapter 1, a determination of project impacts after all mitigation measures, PPPs, Standard Conditions of Approval, and other restrictions and regulations have been implemented should be made. Any remaining significant and unavoidable impacts shall be identified. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

3.6 GEOLOGY AND SOILS

Geological hazards may include but are not limited to surface fault rupture, ground shaking, landslides, liquefaction and subsidence. Because the City of Irvine and surrounding region are generally considered to be geologically active, most projects will be exposed to some risk from geological hazards, such as earthquakes. Although it is not possible to prevent or mitigate all geologic hazards, their destructive effects can be reduced to acceptable levels or avoided through appropriate site location and design.

Relevant Planning Programs

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into State law in 1972, as amended, primarily to mitigate the hazard of fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The act requires that cities and counties withhold development permits for sites within an Alquist-Priolo Earthquake Fault Zone until geologic investigations demonstrate that the sites are not threatened by surface displacements from future faulting. Pursuant to this Act, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

The California Geological Survey (CGS) categorizes active, potentially active, and inactive faults for the Alquist-Priolo Earthquake Fault Zoning Program. The criteria are presented in Table 3.6-1.

Table 3.6-1
Fault Activity Level & Criteria

Activity Level	*Criteria*
Active	Surface displacement with Holocene time (approximately the last 11,000 yrs.)
Potentially Active	Surface displacement of Quaternary age deposits (last 1.6 million years)
Inactive	No displacement in the last 1.6 million years

Figure 3.6-1, *Fault Location Map*, shows the active faults with proximity to the City of Irvine. No active surface faults are mapped or known to cross the City, and the City is not in an Alquist-Priolo Earthquake Fault Zone. The known regional active and potentially active faults that could produce the most significant ground shaking to properties within the City are the Newport-Inglewood (Offshore), Newport-Inglewood (LA Basin), and Whittier-Elsinore Faults, which are also designated as Alquist-Priolo Earthquake Faults (CGS 2010).

Additionally, it is thought that a blind thrust fault (i.e., a fault that does not extend to the surface) may exist beneath the San Joaquin Hills, based on indirect evidence.

The San Joaquin Hills blind thrust is recognized by the California Geological Survey to be active, although is not in an Alquist-Priolo Earthquake Fault Zone due to its blind nature. The fault runs roughly along the coastline south of Huntington Beach and north of Dana Point and is estimated to be at a depth of 1.25 miles below the surface; however, its precise location is unknown. Mapped blind thrust faults in California do not need to be used in the Uniform Building Code design; however blind thrust faults,

including the San Joaquin Hills blind thrust, have been added to the state's database for probabilistic seismic hazard assessment.

Furthermore, a number of inactive faults have been identified to occur within the City. These are shown in Figure D-2, Inactive Fault Locations, of the City's General Plan Seismic Element.

Seismic Response Areas

The City is also broken up into five Seismic Response Areas (SRAs), which are areas that describe the different types of magnitudes of potential seismic hazards, making it possible to evaluate the risks of property damage, personal injury, and loss of vital services that may result from an earthquake. These areas are shown in Figure D-3, Seismic Response Areas, of the City's General Plan Seismic Element. A summary of the SRA's and their predominant characteristics can be found in Table 3.6-2 below.

Table 3.6-2
Seismic Response Areas of Irvine and their Predominant Characteristics

Area	*Characteristics*	*Primary Hazard*
SRA 1	Soft soils, high groundwater	Liquefaction
SRA 2	Dense soils, deep groundwater	Ground motion
SRA 3	Shallow alluvium over abutting bedrock	Ground motion
SRA 4	Slopes over 20%	Slope instability
SRA 5	Less stable geologic formations	Landslides

Historic Earthquakes

Historic earthquakes in the region include:

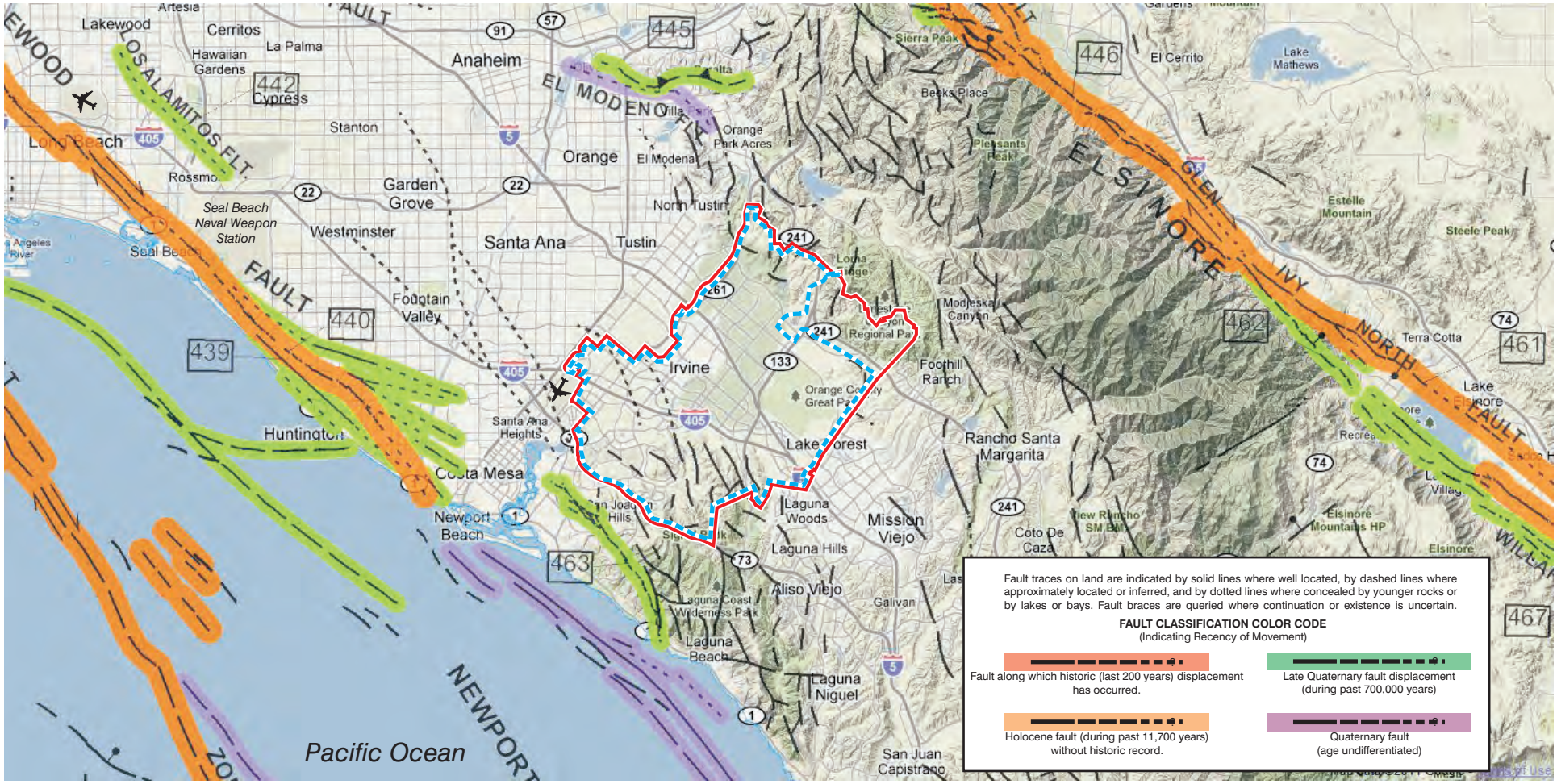
- 1857 Fort Tejon earthquake (magnitude 7.9) on the San Andreas fault
- 1933 Long Beach earthquake (magnitude 6.3) along the Newport-Inglewood Fault Zone
- 1987 Whittier Narrows earthquake (magnitude 5.9) on the Elysian Thrust Fault
- 1992 Landers earthquake (magnitude 7.4)
- 1994 Northridge earthquake (magnitude 6.6).

Other historic earthquakes in the region are provided in the Chronological Earthquake Index of the Southern California Earthquake Data Center's Web site (SCEDC 2007).

Geological Conditions in Irvine

Seismic-related and other geological hazards are described on Table 3.6-3. This table identifies what geological hazards may be present in the City of Irvine and describes where additional information can be obtained.

Fault Location Map



City of Irvine Boundary

City of Irvine Sphere of Influence

0 5
Scale (Miles)

Source: California Geologic Survey. 2010 Fault Activity Map of California

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Table 3.6-3
Potential Geological and Seismic Hazards in Irvine

Type	*Process*	*Location/Soil Types*	*Hazards and Mitigation*
Seismic Hazards			
Surface Fault Rupture	Displacement and cracking of the ground surface along a fault trace (either horizontal or vertical displacement)	Known regional active and potentially active faults within proximity of the City are the Newport-Inglewood (offshore), Newport-Inglewood (LA Basin), and Whittier-Elsinore Faults (see Figure 3.6-1) No active faults with the potential of surface rupture are mapped in the City.	Extensive structural damage, injury, loss of life. Mitigation: Investigation and planning in accordance with current building codes to locate structures outside of high risk zones.
Groundshaking	Seismic ground shaking is associated with several geological hazards, including: • slope failure • liquefaction • soil settlement	Anywhere near earthquake faults. Irvine is in Seismic Zone 4 as designated by the Uniform Building Code	Substantial structural damage. Mitigation: Structural design and earthwork in accordance with applicable codes.
Liquefaction	Strong earthquake shaking causes sediment layers that are saturated with groundwater to lose strength and behave as fluid	Granular materials at depths of less than 50 ft. with silt and clay content of less than 30% and a relatively shallow groundwater table. Areas of potential liquefaction in the City of Irvine are identified as Zone of Required Investigation for Liquefaction (State of California Seismic Hazard Zones) and area SRA 1 (see Table 3.6-2)	Structural and property damage. Mitigation: Geological investigation and geotechnical analyses to determine earthwork methods and structural design.
Seismically-induced settlement	Dry dynamic settlement (above groundwater) and liquefaction (below groundwater)	Loose to moderately dense sandy soil	Structural and property damage. Mitigation: Geological investigation and geotechnical analyses to determine earthwork methods and structural design.

Table 3.6-3
Potential Geological and Seismic Hazards in Irvine

Type	*Process*	*Location/Soil Types*	*Hazards and Mitigation*
Geologic Hazards			
Mudflows, Landslides, and Slope Failures	Mudflows and landslides are perceptible downward movements of a mass of earth (soil and/or debris), rock or a combination of the two (human-caused or natural)	Some portions of the City are in a Zone of Required Investigation for Earthquake-Induced Landslides, as shown on the State of California Seismic Hazard Zones, Tustin and El Toro Quadrangle maps. Additionally, as shown in Figure D-3 of the City's General Plan Seismic Element, the areas within SRA 4 and SRA 5 are the most susceptible slope instability and landslides (see Table 3.6-2).	Structural and property damage Mitigation: Geological investigation and adherence to recommended earthwork methods and procedures.
Subsidence and Unstable Soils			
Subsidence	Gradual settling or sinking of the ground surface with little or no horizontal movement. Can be human caused (over-extraction of groundwater, gas, or oil) or natural (seismically-induced)	Semi-consolidated sand and silt soils. Not common in Irvine.	Structural and property damage (above and below ground) Mitigation: Structural design in accordance with Geotechnical Engineer recommendations.
Expansive Soils	Considerable swelling and shrinking of soil when it is wetted and dried	Soils with significant amounts of clay particles. Very common in Irvine	Structural and property damage. Mitigation: Earthwork (soil removal) and structural design (increased reinforcement) in accordance with the Geotechnical Engineer Recommendations.
Compressible Soils	Soil compressibility refers to a soil's potential for settlement when subjected to increased loads, as from a fill surcharge or a structure	Near-surface natural soils are usually most compressible. Deeper existing soils are generally compressed already.	Structural and property damage. Mitigation: Standard earthwork methods in accordance with the California Building Code.

Table 3.6-3
Potential Geological and Seismic Hazards in Irvine

Type	Process	Location/Soil Types	Hazards and Mitigation
Collapsible Soils	Grains of soil are realigned into a configuration of less volume when saturated with water, resulting in a rapid settlement under relatively low loads	Low-density, fine-grained granular soils	Structural and property damage. Mitigation: Geotechnical engineering analyses, earthwork, and structural design.
Corrosive Soils	Corrosive soils react chemically with the surfaces of metals and concrete, weakening these materials	Soils that contain water-soluble sulfate can damage concrete. Electrical resistivity, chloride content, and pH level are all indicators of the soil's tendency to corrode ferrous metals.	Damage to building components, sidewalks, and roadways. Mitigation: Building material design.
Erosion	Exposure of soil to wind or water, causing it to be blown or washed away. Can be natural or human-caused (construction)	Any place that is exposed to wind and water or is under construction. Granular soils are most susceptible.	Structural damage (undermining foundations), clogging storm drains, and depositing dirt and mud. Mitigation: Adherence to the Storm Water Pollution Prevention Plan (SWPPP) during earthwork and civil engineering design.

3.6.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for geological resources. A project would normally have a significant effect on the environment if the project would:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

   1. 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. Refer to Division of Mines and Geology Special Publication 42.
   2. Strong seismic ground shaking.
   3. Seismic-related ground failure, including liquefaction.
   4. Landslides.

b. Result in substantial soil erosion or the loss of topsoil.

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.

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.

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.

3.6.2 Determining Significance

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The cultural resources environmental analysis should look at the questions provided in this flow chart. Additional questions that pertain specifically to cultural resources are provided under each step of the "General Approach for Environmental Analysis" flow chart.

Step 1: Determine the Existing Conditions

The existing setting section of geology and soils should include a description of the project site's terrain, soil types, and local faults. The following questions are meant to help focus the existing setting discussion for geology and soils.

- Although Irvine is not within an Alquist-Priolo fault zone, there are still faults present in the City, as shown in Figure 3.6-1. Are there faults present on or near the project site? Consult the program EIR and previous geotechnical reports if they are available for the project site.

- What are the soil types of the project site? Are any considered unstable?

Step 2: Project Impacts

Once a project description has been established for a proposed project, the potential for geology and soils impacts to occur can be determined. The potential for impacts is based on the following questions, provided to supplement the questions under Step 2 of the "General Approach for Determining Significance Flow Chart" in Chapter 1.

- Would the project place buildings on or near an active or potentially active fault?

- Does the project require new construction or development on unstable soils?

Step 3: Apply Plans, Policies, and Programs

Appendix C lists PPPs that pertain to geology and soils. General requirements include the obtaining site-specific geotechnical reports prior to the issuance of grading permits and development in accordance with the California Building Code. These requirements are meant to reduce geological hazards.

Step 4: Determine Impact Significance

When it has been determined that a project would be exposed to geological hazards, a geotechnical report should be prepared. The geotechnical report contains technical analysis of seismic and geological hazards related to the onsite soil types and terrain and risks related to the proximity to faults. They also include a discussion of the City's building standards. As mentioned under Step 3, the City requires geotechnical reports to be prepared prior to the issuance of grading permits. For projects that do not require new construction (i.e., they consist of remodeling or renovating an existing building), a geotechnical report is not necessary. However, the building would need to be constructed to the City's building standards. The geotechnical study can help determine the significance of impacts. Also, any CEQA documents and cultural reports that currently exist for the planning area in which the project is located can also help determine the level of significance of geology and soils impacts.

Step 5: Formulate Mitigation

Mitigation measures to reduce geology and soils impacts may require the implementation of a building setback from an identified fault (which should be identified in the geotechnical study), implementation of specific construction techniques, the avoidance of development on certain soil types, or the replacement or compaction of soil to make it more stable on the project site. The geotechnical report usually identifies mitigation measures that may be used in the EIR. The EIR may use or revise these mitigation measures so that they adequately reduce or avoid a significant impacts. As discussed in the flow chart in Chapter 1, the mitigation measures should be roughly proportionate to the potentially significant impact.

Step 6: Determine Significance after Mitigation

As described in the flow chart in Chapter 1, a determination of project impacts after all mitigation measures, PPPs, Standard Conditions of Approval, and other restrictions and regulations have been implemented, should be made. Any remaining significant and unavoidable impacts shall be identified. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

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3.7 GREENHOUSE GAS EMISSIONS

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. Certain gases, such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3), absorb and emit infrared radiation and therefore have an effect on climate. These are greenhouse gases (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). Table 3.7-1 lists the GHGs and their relative Global Warming Potential (GWP) compared to CO_2.

Table 3.7-1
Greenhouse Gases and Their Relative Global Warming Potential Compared to CO_2

GHG	Atmospheric Lifetime (years)	Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	50 to 200	1
Methane (CH_4)[2]	12 (±3)	21
Nitrous Oxide (N_2O)	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_2F_6	10,000	9,200
Perfluorobutane: C_4F_{10}	2,600	7,000
Perfluoro-2-methylpentane: C_6F_{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 CO_2.
[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 CO_2 is not included.

Assembly Bill 32 (AB 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 requires the state's global warming emissions to be reduced to 1990 levels by the year 2020.[1] It is projected that GHG emissions in California by 2020 will be approximately 596 million metric tons (MMTons). (California Air Resources Board [CARB] 2008). In December 2007, CARB approved a 2020 emissions limit of 427 MMTons of CO_2e (471 MMtons) for the state. The 2020 target requires emissions reductions of 169 MMTons, 28.5 percent of the projected emissions compared to business-as-usual (BAU) in year

[1] AB 32 is based on Executive Order S-3-05, signed in 2005, which required state agencies to reduce GHG emissions to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.

2020 (i.e., 28.5 percent of 596 MMTons) (CARB 2008). Since release of the 2008 Scoping Plan, CARB has updated the statewide GHG emissions inventory to reflect GHG emissions in light of the economic downturn and measures not previously considered within the 2008 Scoping Plan baseline inventory. The updated forecast predicts emissions to be 507 MMTons by 2020. The new inventory identifies that an estimated 80 MMTons of reductions are necessary to achieve the statewide emissions reduction of AB 32 by 2020, 15.7 percent of the projected emissions compared to BAU in year 2020 (i.e., 15.7 percent of 507 MMTons).

Senate Bill 375 (SB 375)

In 2008, SB 375 was adopted to connect the GHG emissions reductions targets established in CARB's 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 (excludes 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 17 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, Riverside, Ventura, and Imperial. CARB's targets for the SCAG region are 8 percent reduction from 2005 levels by 2020 and 13 percent reduction from 2005 levels by 2035.

SB 375 also requires the MPOs to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plan. For the SCAG region, the draft SCS was released in December 2011 and was adopted in April 2012 as part of the 2012 Regional Transportation Plan (RTP). The SCS incorporated the Orange County Transportation Authority (OCTA)/Orange County Council of Government's SCS (Subregional SCS) for Orange County, which was adopted by the Orange County Council of Governments (OCCOG) in June 2011. The SCS sets forth a development pattern for the region, which, when integrated with the 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 provides incentives for consistency for governments and developers. 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 other development patterns, infrastructure, and/or transportation measures.

3.7.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for greenhouse gas emissions. A project would normally have a significant effect on the environment if the project would:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.7.2 Determining Significance

General Approach

On December 30, 2009, the Natural Resources Agency adopted amendments to the State CEQA Guidelines that became effective on March 18, 2010. The amendments to the State CEQA Guidelines include new requirements to evaluate GHG emissions. Pursuant to the amended State CEQA Guidelines, a lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase (or reduce) GHG emissions compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Currently, there is no statewide GHG emissions threshold that has been used to determine potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air districts in the state. Therefore this environmental issue remains unsettled and should be evaluated on a case-by-case basis until such time the South Coast Air Quality Management District (SCAQMD) adopts significance thresholds and GHG emissions impact methodology. In the interim, a GHG emissions inventory should be included for all development projects in the City of Irvine. However, a life cycle emissions inventory should generally not be conducted for a development project because not enough information is typically available and therefore life cycle GHG emissions would be speculative. The approach outlined below includes SCAQMD's proposed GHG emissions thresholds approach along with other methodologies currently applied by CEQA practitioners statewide for evaluating GHG emissions impacts.

Step 1: Determine the Existing Conditions

The existing conditions section should include a discussion on the existing GHG emissions (if applicable) and applicable regulations for GHGs. The City of Irvine is within the South Coast Air Basin (SoCAB), which is managed by the SCAQMD.

Modeling Tools

There are several generally accepted models for use in California to identify GHG emissions from development projects. The most commonly used models are URBEMIS2007 and California Emissions Estimator Model (CalEEMod), which were both developed for SCAQMD. Generally, there is a phase-in period before SCAQMD starts commenting that use of the newer model is required for CEQA projects. While both models are still accepted, it is likely that SCAQMD will require use of CalEEMod once the new emissions factors in EMFAC2011 are integrated into the program.2 It is recommended that future development projects use the latest model available when conducting a CEQA evaluation. Therefore, CalEEmod should be used for most development projects in the City of Irvine.

[2] The new emission factors in EMFAC2011 are not currently proposed to be integrated into the URBEMIS program.

Step 2: Project Impacts

SCAQMD has not yet adopted CEQA significance thresholds for development projects. In the absence of a climate action plan for Irvine, SCAQMD thresholds, when adopted, would apply to future development in the City. The following significance criteria are proposed to be adopted by SCAQMD in 2012. SCAQMD is proposing both screening criteria and significance criteria for determining level of significance for project-related GHG emissions. Tier 1 through 3 screening criteria below are not intended as a bright-line threshold to indicate significant impacts; rather, they provide additional guidance to determine when impacts would not occur or are *de minimus* so that a detailed analysis is not necessary.

Screening Criteria

The following are the proposed SCAQMD thresholds for GHG.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

Tier1 If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

Tier 2 If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., City or County), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions and recommend a quantitative assessment using CalEEMod. SCAQMD is proposing a screening-level threshold of 3,000 metric tons (MTons) annually for all land use types or the following land-use-specific thresholds: 1,400 MTons for commercial projects, 3,500 MTons for residential projects, or 3,000 MTons for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal and, therefore, less than cumulatively considerable impact on GHG emissions:

Tier 3 If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

Tier 4 If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

Significance Thresholds

SCAQMD has proposed an efficiency target for projects that exceed the screening threshold. The current recommended approach is per capita efficiency targets. SCAQMD is not recommending use of a percent emissions reduction target. Instead, SCAQMD proposes a 2020 efficiency target of 4.8 MTons per year per service population (MTons/year/SP) for project-level analyses and 6.6 MTons/year/SP for plan level

projects (e.g., program-level projects such as specific plans and general plans). If projects exceed these per capita efficiency targets, GHG emissions would be considered potentially significant in the absence of mitigation measures. The Tier 4 efficiency metric is GHG emissions of full buildout of the project in year 2020.

GHG Emission Sectors

The latest model to evaluate GHG emissions for development project is CalEEMod. Sectors to consider for inclusion in a project's GHG emissions inventory include:

Construction Emissions. Construction emissions include equipment and vehicle exhaust, fugitive dust, and off-gas emissions from construction activities. Construction emissions are typically short-term emissions but can represent a substantial one-time amount of GHG emissions. Therefore, typical practice has been to amortize these one-time emissions over a 30-year time frame and combine these with the GHG inventory.

Water and Wastewater. GHG emissions from this sector are indirect emissions from the treatment, conveyance, and distribution of water and wastewater. These emissions should be included in a GHG emissions inventory for a development project if the project is likely to increase water or wastewater demand.

Waste Disposal. GHG emissions from this sector are indirect emissions from waste disposal. These emissions should be included in a GHG emissions inventory for a development project if the project is likely to increase waste disposal onsite during project operations.

Energy. Indirect emissions from purchased energy and direct emissions from natural gas use are included in the energy sector. Use of natural gas includes gas used for heating, cooking, and fireplaces. Emissions from purchased energy and natural gas should be included in most GHG emissions inventories.

Area Sources. Area sources include architectural coatings, aerosols, and landscaping fuel used onsite. The may represent a small fraction of the total GHG emissions inventory but should be included when they generate more than a nominal amount of GHG emissions.

Transportation. Transportation-related GHG emissions are from mobile sources of emissions generated by the project (e.g., vehicles). Emissions from transportation typically represent the largest component of a GHG emissions inventory and should be included if a project generates new trips.

Carbon Sequestration. This sector includes one-time emissions from vegetation planted or removed as a result of the project (sequestered carbon). This sector is a GHG reduction that is currently considered optional in a GHG emissions inventory but may assist in reducing the net increase in GHG emissions generated by the project. If included, the net increase in vegetation (e.g., existing vegetation removed and new vegetation replaced) weighed against the removal of vegetation should be considered.

GHG reductions from business as usual projections contained in the model for any of the above sectors should be substantiated.

Service Population (SP) Defined

Service population shall include people who live and work within a project site. However, many projects include users that do not fit into this definition. Therefore, service population may be expanded to include these populations, where substantial evidence is available that other populations constitute the majority of users to the site and are not double-counted in the inventory. Examples of this include:

- Students and staff at schools (non-mixed-use projects only)
- Visitors at parks and recreational facilities (non-mixed-use projects only)
- Parishioners at religious institutions (non-mixed-use projects only)
- Customers/patrons at commercial/retail uses (commercial/retail only projects)

Other Applicable GHG Significance Thresholds

In addition to the thresholds proposed by SCAQMD, other air districts in California have considered alternative threshold approaches to evaluating GHG emissions impacts based on the GHG reduction targets identified by CARB, consistent with AB 32. In the Scoping Plan, CARB identified that the state would need to reduce GHG emissions 28.5 percent below 2020 BAU to achieve the AB 32 targets. This target has been considered as part of the current threshold approach proposed by County of San Diego[3] and has been adopted as a threshold of significance by the Sacramento Metropolitan Air Quality Management District[4] and the San Joaquin Valley Unified Air Pollution Control District[5].

The reduction from BAU is based on a percent reduction from future, projected emissions inventory without any GHG reduction measures compared to the future, projected emissions inventory with federal, state, and project-specific GHG reduction measures in place. Because the BAU scenario is based on a "future" condition, the level of significance conclusions are not based on the increase in GHG emissions from existing conditions. However, the percent reduction from BAU considers the potential increase in efficiency integrated into a project's design and operation.

Consistency with GHG Reduction Plans

Consistency with the Scoping Plan and SCAG's SCS, once adopted, should be considered in a project's evaluation of GHG emissions. The Scoping Plan identifies state agency measures taken to reduce GHG emissions, which include compliance with the newer building codes, including 2008 Building and Energy Efficiency Standards, and the California Green Building (CALGreen). In addition, strategies outlined in the Subregional SCS should be incorporated, to the extent they apply to, and are feasible for, the development project, until SCAG's SCS is adopted.

Step 3: Apply Plans, Policies, and Programs

The City of Irvine lists the PPPs in each topical section of an EIR, usually preceding or at the start of the impact analysis section. The PPPs include local, state, and federal regulations, including the City's Standard Conditions of Approval. PPPs may reduce the level of impact significance and would preclude the need for additional analysis. This must be substantiated in the environmental analysis.

Step 4: Determine Impact Significance

Once it has been determined that a project impact exceeds the significance criteria and existing PPPs are not able to reduce the significance, these impacts are potentially significant. In some cases, an impact may not be significant if it is consistent with the general plan, the City's vision for the area, or other existing plans or guidelines for the project site. Significance conclusions must be substantiated in the analysis.

Step 5: Formulate Mitigation

For GHG emissions, mitigation measures are usually based on the technical analysis. Appendix D lists sample mitigation measures for GHG emissions.

[3] Draft thresholds were released by the County on February 17, 2012. The percent reduction from BAU is based on the updated inventory conducted by CARB after adoption of the 2008 Scoping Plan.
[4] Adopted April 2011.
[5] Adopted December 2010.

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

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3.8 HAZARDS AND HAZARDOUS MATERIALS

Hazardous Materials Sites in Irvine

Hazardous material sites can include any business or operation that has previously used or currently uses hazardous materials on a routine basis. It can also include any site where hazardous materials have been spilled. The State Water Resources Control Board has a general database that indicates where hazardous materials are known to exist. This site, Geotracker, can be accessed online at http://geotracker.swrcb.ca.gov/.

Environmental Records Review

An environmental records review (ERR) is a more complete database of properties that may contain hazardous materials. Usually GeoSearch is used to complete an ERR. This database is a collection of regulatory agency databases that have information on properties that contain, or have contained in the past, hazardous materials. The use of GeoSearch requires a fee and is generally used when a Phase I site assessment is required for the proposed project. A search of this database includes a search of the following regulatory agency databases:

- National Priorities List (NPL)
- Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS)
- CERCLIS No Further Response Actions Planned (CERCLIS-NFRAP)
- Resource Conservation and Recovery Act (RCRA) non-Corrective Action (CORRACTS) Treatment Storage and Disposal (TSD) facilities
- RCRA CORRACTS TSD facilities
- RCRA generators
- State Hazardous Waste Sites
- Registered Underground Storage Tanks
- State Landfills and Solid Waste Disposal Sites
- State Leaking Underground Storage Tanks

Superfund Sites

The only Superfund site in the City of Irvine is the former El Toro Marine Corps Air Station. A final record of decision has been filed for this site with the Environmental Protection Agency (EPA) and is available on the EPA website. Two large aircraft hangars were the primary source of the volatile organic compounds (VOC) contamination detected in groundwater. This site is being addressed in several long-term remedial phases focusing on cleanup of the groundwater, identification of the sources and cleanup of VOC contamination in soils, and cleanup of abandoned wastewater treatment lines and tanks (EPA 2011).

Accidental Release Program

The California Accidental Release Program (CalARP) is administered by the Orange County Fire Authority (OCFA) in Irvine. OCFA monitors and regulates identified industries in Irvine that have a stationary source of hazardous materials. The potential hazardous threat of CalARP facilities is determined by completing a land use compatibility analysis. The regulatory responsibilities of CalARP, including the development and implementation of a Risk Management Plan (RMP), are found in Title 19, Division2, Chapter 4.5 of the California Code of Regulations (CCR).

Hazardous Air Emissions and the FIND Database

The South Coast Air Quality Management District (SCAQMD) maintains a web tool to search for public information about SCAQMD-regulated facilities that have permits to operate equipment that release pollutants into the air. The system is called the Facility Information Detail (FIND). The FIND database provides nonconfidential facility information, including facility name, address, facility status (active, out-of-business, etc.), standard industrial classification code, application and permit number, permit and application status, application and permit issue dates, equipment type and description, history of notices of violation and recent notices to comply (from January 2003 to present), reported criteria and toxic emissions by year, and pollutant type for the years that data are currently available in the database.

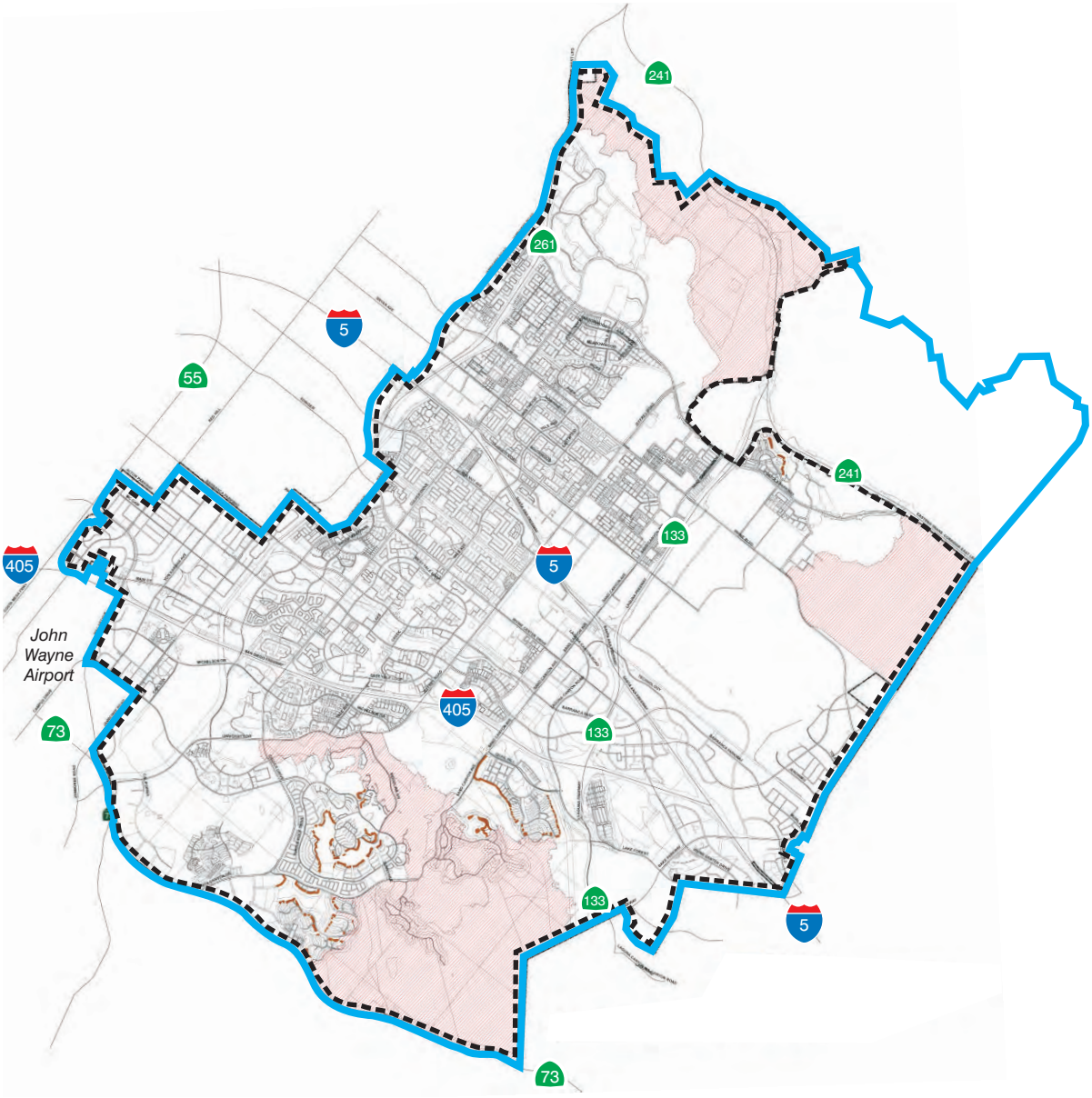
Fire Hazard Zones

Fire hazard zones are divided between state responsibility areas (SRA) and local responsibility areas (LRA). Figure 3.8-1 shows the locations of LRAs in and around Irvine. Both SRAs and LRAs have fire severity zones: moderate, high, and very high. The building code requirements for fire prevention are more stringent in very high fire severity zones. Figure J-2, Fire Hazard Areas, of the City of Irvine General Plan Safety Element, also indicates the fire hazard areas of the City.

Airport Land Use Plan (John Wayne Airport)

The Airport Environ Land Use Plan (AELUP) for John Wayne Airport, described in Section 2.10, *Land Use*, and in Appendix F, *Regulatory Information*, contains land use restrictions that are meant to reduce the hazards associated with airport land use plans.

Fire Hazards–Local Responsibity Areas



LEGEND

- City of Irvine Boundary
- City of Irvine Sphere of Influence
- Buffer Zones
- Very High Fire Hazard Severity Zones

0 3
Scale (Miles)

Source: CALFIRE 2011

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3.8.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for hazards and hazardous materials. A project would normally have a significant effect on the environment if the project would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b. 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.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

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.

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.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

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.

3.8.2 Determining Significance

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The hazards and hazardous materials environmental analysis should look at the questions provided in this flow chart. Additional questions that pertain specifically to hazards and hazardous materials impacts are provided under each step of the "General Approach for Environmental Analysis" flow chart.

Step 1: Determine the Existing Conditions

Step 1 of the "General Approach for Determining Significance" flow chart in Chapter 1 provides guidelines for obtaining the general information needed to establish the base environmental condition. The following questions focus the assessment on the information needed for hazards and hazardous materials.

- If the site is currently occupied, what types of land uses are onsite? If they are residential, it is unlikely there are hazardous materials onsite. If they are non-residential, is there potential that hazardous materials may be onsite?

- Has a hazardous materials site discussion been included in EIRs prepared for the planning area in which the proposed project is located?

- Is the site listed on a database of hazardous materials sites obtained from standard environmental record sources identified in the current ASTM International, *Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process* (e.g., Geotracker, FIND, etc.)?

- Is the site impacted by an off-site source of hazardous materials listed on a database obtained from standard environmental record sources, and located within the specified search distances identified in the current ASTM International, *Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process* (e.g., is the site within 1,000 feet of a major source of toxic air contaminants?) If adjacent to another city/county jurisdiction, has a comparable database been reviewed for that city/county?

- Is the site within the portion of the IBC that is within the Airport Environs Land Use Plan (AELUP) restricted area?

- Is the site within a wildland fire area, identified as a high or very high fire hazard severity zone on the SRA or LRA maps or in the City's General Plan?

Step 2: Project Impacts

Once the project description has been determined, the impacts of the proposed project on the existing environment can be determined. The following issues and questions should be taken into account when determining whether the project would have potential impacts.

- Would the proposed project include industrial land uses?

- Would it place people (e.g. residents or workers) near or on sites that may be found on an agency's database of sites with hazardous materials, such as those listed under "Environmental Review Record," CalARP[1], or the FIND[2] database? If adjacent to another city/county jurisdiction, has a comparable data base been reviewed for that city/county?

- Does the project require the destruction of existing buildings? If the project involves demolition of existing buildings, asbestos and lead-based paint may be present. The environmental analysis must describe the process for handling these materials.

[1] The California Accidental Release Program requires companies that use or store more than the regulated threshold quantities of chemicals to file a Risk Management Plan (RMP) that calculates the off-site consequences of hazardous material releases. The Orange County Fire Authority (OCFA) maintains a list of RMPs in the City of Irvine.

[2] The Facility INformation Detail (FIND) database is available at the following website: http://www.aqmd.gov/webappl/fim/default.htm

- Would the proposed land uses be subject to regulatory review by CalARP? Do proposed businesses require an RMP?

- If the project is within the influence area of the John Wayne Airport AELUP, does it meet the building design and land use restrictions? Figure 3.8-2 and 3.8-3 shows the airport height restrictions and airport safety zones, respectively.

Step 3: Apply Plans, Policies, and Programs

The City of Irvine has a number of PPPs that apply to hazards and hazardous materials (see Appendix C). Federal, state, and local agencies regulate activities during both the construction and operation of businesses that may be on a contaminated site or that may emit or use hazardous materials. There are also regulations that must be followed in cases of accidental release or exposure to hazardous materials. In most cases, hazards and hazardous materials impacts can be reduced to less than significant levels when the City's PPPs are applied and followed.

Step 4: Determine Impact Significance

Once it has been determined that a project impact exceeds the significance criteria and existing PPPs are not able to reduce the significance, these impacts are potentially significant. Significance conclusions must be substantiated in the analysis.

Step 5: Formulate Mitigation

Mitigation measures to reduce potentially significant impacts are created after it has been substantiated that an impact is significant. Mitigation measures are meant to relate directly to the project impact and must be feasible to enforce and implement by the project applicant, lead agency, or another responsible agency.

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

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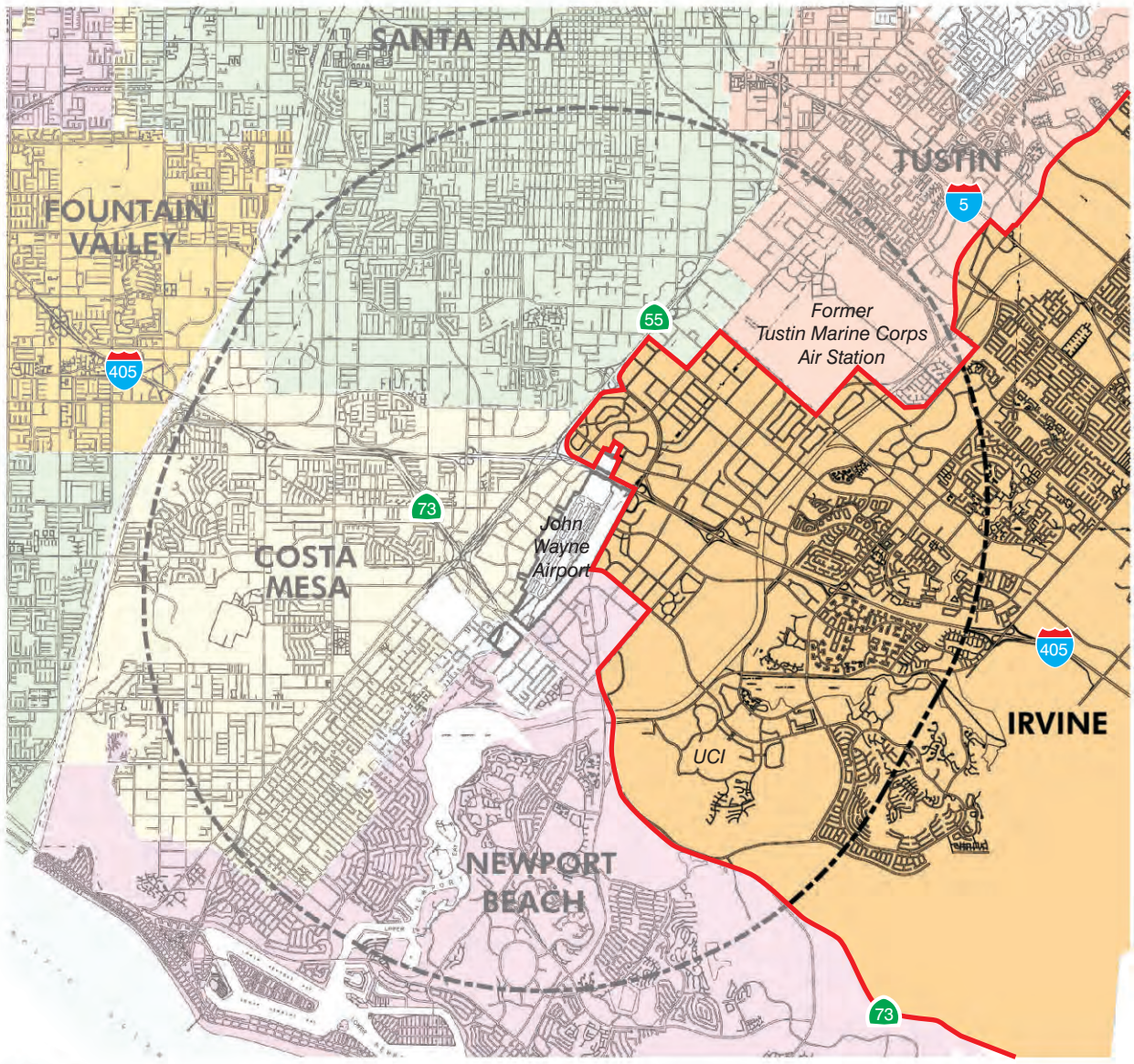
John Wayne Airport Height Restriction Zone



LEGEND

- 20,000' Radius
- City Boundaries
- Airport Boundaries
- City of Irvine Boundary

Note: County unincorporated areas are shown in white.

0 2
Scale (Miles)

Source: Airport Land Use Commission for Orange County. 2008 JWA Environs Land Use Plan.

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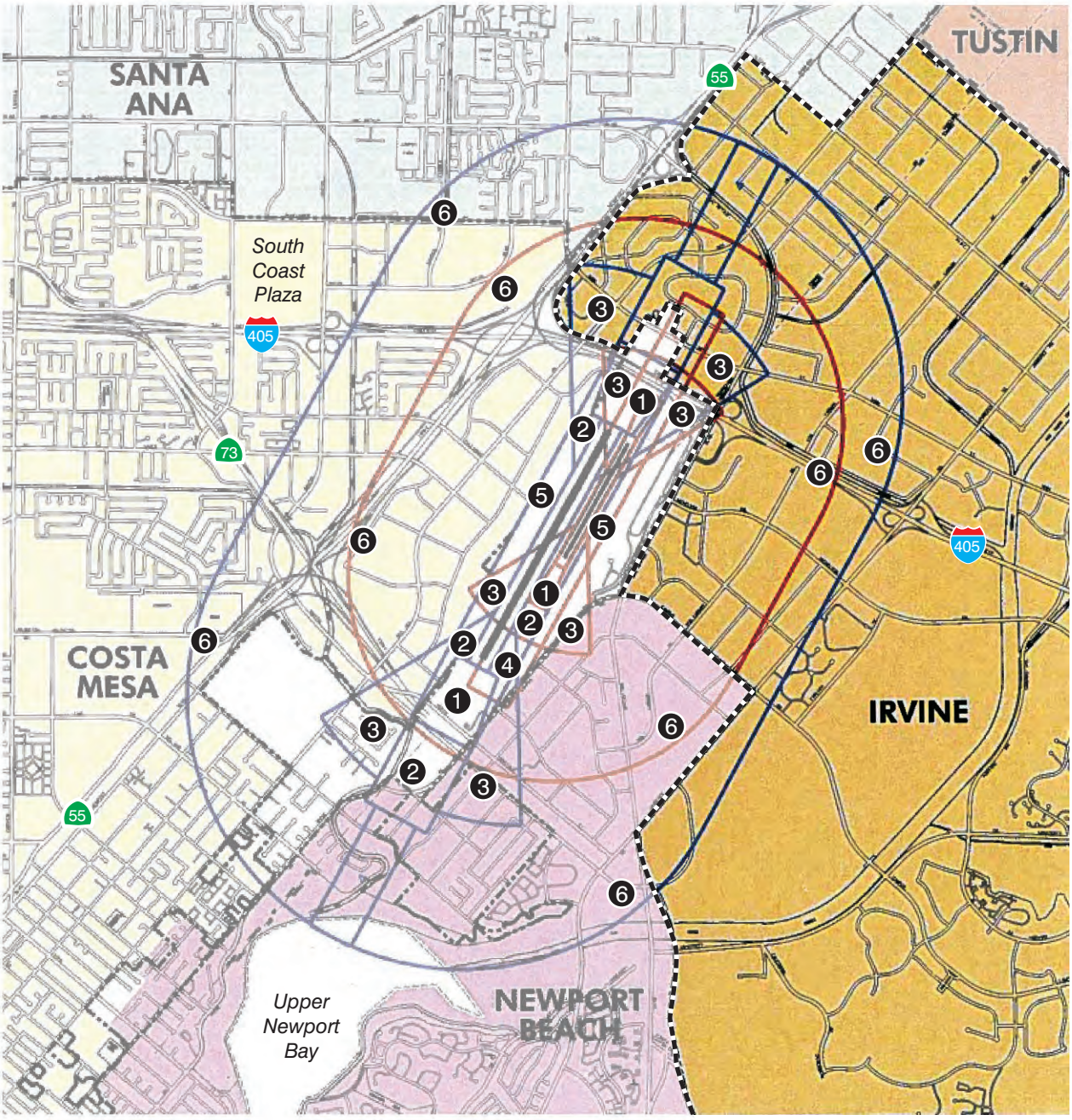
John Wayne Airport Safety Zone



LEGEND

1. Runway Protection Zone
2. Inner Approach/Departure Zone
3. Inner Turning Zone
4. Outer Approach/Departure Zone
5. Sideline Zone
6. Traffic Pattern Zone

1-6 Safety compatability zones for runway 1L & 19R (A medium general aviation runway as described in the California Airport Land Use Planning Handbook, January 2002 Edition)

1-6 Safety compatability zones for runway 1R & 19L (A short general aviation runway as described in the California Airport Land Use Planning Handbook, January 2002 Edition)

----- City of Irvine Boundary

0 1
Scale (Miles)

Source: Airport Land Use Commission for Orange County. 2008 JWA Environs Land Use Plan.

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3.9 HYDROLOGY AND WATER QUALITY

The hydrology and water quality CEQA analysis covers a wide range of topics related to flooding, hydrological flows, groundwater recharge, and water quality. A project would cause potentially significant hydrology or water quality impacts if it violates state or federal water quality standards, alters the hydrological characteristics of the site (drainage patterns and/or groundwater recharge), allows for a substantial increase in stormwater flow, involves development within a floodplain or flood path of a dam or reservoir, or places development within a seiche, tsunami, or mudflow path.

Drainage and Runoff

If the proposed development would adversely change the onsite hydrology, affecting drainage patterns both on- and offsite, either project design features or mitigation measures should be incorporated that reduce the affects of the proposed development. In the SARWQCB region, new development and significant redevelopment must demonstrate compliance with the Orange County Municipal Stormwater Permit Santa Ana Region (Order No. R8-2009-0030). This permit is effective May 22, 2009 through April 1, 2014. The requirements of this permit for new development and significant redevelopment are outlined in Appendix F, *Regulatory Information*.

Construction Site Runoff

Stormwater runoff is caused by natural precipitation while urban runoff is water from human use such as irrigation systems. Construction sites typically generate stormwater runoff because irrigation systems are usually not in place yet during construction. Stormwater runoff from construction sites contains numerous pollutants and sediment that are carried off-site, into stormwater drains, catch basins, and ultimately to rivers and the Pacific Ocean. Construction site sediments and pollution can cause chemical, biological, and physical harm to local waterways. These pollutants of concern should be addressed by complying with the Construction General Permit (CGP). This permit is effective July 1, 2010 through September 2, 2014.The CGP requires the development and implementation of a site-specific Stormwater Pollution Prevention Plan (SWPPP), which includes best management practices (BMP) to help reduce the negative affects of construction-related stormwater pollution. The presumed construction conditions and preventative actions should be discussed in an environmental document in order to determine the development project's construction impacts. Further details for CGP are outlined in Appendix F, *Regulatory Information*.

Post-Construction Site Runoff

Post-construction runoff can come from landscaping irrigation (urban runoff) and natural precipitation (stormwater runoff). Under the Orange County Municipal Stormwater Permit Santa Ana Region (Order No. R8-2009-0030), new development and redevelopment must match the pre-project water balance (i.e., the amount of water that becomes runoff) for the smallest storms up to the 85th percentile storm event (or the smallest storm event that generates runoff, whichever is larger). Development projects that fail to demonstrate how water will be retained onsite to meet these requirements may have potentially significant impacts on hydrology.

Regulatory Requirements for Water Quality

A description water quality permits, such as the general construction and municipal separate storm sewer system (MS4) permits, is included in Appendix F.

HYDROLOGY AND WATER QUALITY

Clean Water Act and Water Quality Regulation

Section 303(d) of the federal Clean Water Act (CWA) requires states to identify and establish a list of water bodies for which technology-based effluent limitations required by section 301 of the CWA are not stringent enough to attain and maintain applicable water quality standards. The list is required to be submitted by the State Water Resources Control Board (SWRCB) to EPA every two years for review and approval. These 303(d)-list water bodies are termed "impaired water bodies."

For each water-quality-limited segment of water bodies identified in the 303(d) list, SWRCBs are required to develop what is called total maximum daily load (TMDL), which is the maximum daily load of a pollutant that a water body can receive and still attain water quality standards, or take other action to address the impairment. The pollution above that maximum has to be budgeted by allocating it among the various sources of the pollutant in order to regain the beneficial uses of the water body.

Within the City of Irvine, the following water bodies are listed as impaired, as shown in Table 3.9-1:

Table 3.9-1
Impaired Water Bodies in Irvine

Water Body	*Pollutant*
Borrego Creek (from Irvine Boulevard to San Diego Creek Reach 2)	ammonia (unionized); indicator bacteria
Peters Canon Channel	DDT; toxaphene; pH; indicator bacteria
San Diego Creek Reach 1	fecal coliform; nutrients; pesticides; sedimentation/siltation; selenium; toxaphene
San Diego Creek Reach 2	indicator bacteria
Serrano Creek	ammonia (unionized); pH; indicator bacteria
Upper Newport Bay	Nutrients, pathogens, pesticides, sedimentation/siltation
Lower Newport Bay	Nutrients, pathogens, pesticides

Source: State Water Resources Control Board (SWRCB), 2010. 2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report)

The following Total Maximum Daily Loads (TMDLs) apply to waterbodies within the City of Irvine:

- TMDLs for Toxic Pollutants San Diego Creek and Newport Bay California
- Nutrient TMDL for Newport Bay/San Diego Creek Watershed
- TMDL for Sediment in the Newport Bay/San Diego Creek Watershed
- Diazinon and Chlorpyrifos[1] TMDL for San Diego Creek and Upper Newport Bay
- San Diego Creek/Newport Bay Organochlorine Compounds TMDLs

[1] Diazinon and Chlorpyrifos are organophosphate insecticides that are used to control insect pests.

Additional information can be found on the Santa Ana Regional Water Quality Control Board (SARWQCB) Web site:

(http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/index.shtml)

Santa Ana Regional Water Quality Control Board

The entire City of Irvine is within the Newport Bay watershed and the jurisdictional area of the SARWQCB.SARWQCB is responsible for the SARWQCB Basin Plan, which provides all relevant information necessary to carry out federal mandates for the antidegradation policy, 303(d) listing of impaired waters, and related TMDLs, and information relative to National Pollution Discharge Elimination System (NPDES) and Waste Discharge Requirements (WDR) permit limits.

Orange County Drainage Area Management Plan (DAMP) includes the SARWQCB guidelines for CEQA review, which the City is including in this manual to help indicate when impacts may occur.

SARWQCB CEQA Review Guidelines

Pursuant to the Santa Ana Region (North Orange County) NPDES Permit, the draft Orange County Drainage Area Management Plan for New Development and Significant Redevelopment lists the following potential impacts to be considered during CEQA review:

- Potential impact of project construction on stormwater runoff;
- Potential impact of project's post-construction activity on stormwater runoff;
- Potential for discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas;
- Potential for discharge of stormwater to affect the beneficial uses of the receiving waters;
- Potential for significant changes in the flow velocity or volume of stormwater runoff to cause environmental harm; and
- Potential for significant increases in erosion of the project site or surrounding areas.
- Potential decreases in quality and quantity of recharge to groundwater.
- Potential impact of pollutants in storm water runoff from the project site on any 303(d) listed "impaired" waterbodies.

These urban runoff and stormwater pollution issues will be considered in the Initial Study process (project application forms and checklists) and in the preparation and reviews of environmental documentation (Negative Declarations, Mitigated Negative Declarations or EIRs) (OCPW 2011).

Industrial General Permit

The General Industrial Permit (GIP) is an NPDES permit that regulates discharges associated with ten broad categories of industrial activities. The GIP requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable and best conventional pollutant control technology. The GIP also requires the development of a SWPPP and a monitoring plan. Through the SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce storm water pollution are described.

Other Hydrology Issues Addressed in CEQA

The hydrology of a geographical area includes the drainage patterns, flow rates, and circulation and distribution of surface and groundwater. Areas that are prone to flooding are floodplains or flood hazard areas, which are outlined and categorized by the Federal Emergency Management Agency (FEMA) and described under Section 2.9.2, Determining Significance. Seiches, tsunamis, and mudflows are all hazardous conditions related to the movement of substantial amounts of water. They tend to occur as a result of a natural disaster or during heavy storms. Seiches are large earthquake-generated waves that occur in rivers, lakes, reservoirs, ponds, and any other onshore large body of water. Unlike tsunamis, they do not occur in the ocean. Tsunamis only occur in the ocean and are large, earthquake-generated waves that start offshore and travel to the coast. Mudflows are defined as fast-moving landslides made of mud and debris, typically caused by heavy rainfall or melting snow in steep hillsides.

FEMA Flood Hazard Zones

Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk (see Table 3.9-2). These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area. FIRMs can be created on FEMA's "Map Service Center" Web site (http://msc.fema.gov/).

Table 3.9-2
FEMA Flood Hazard Zones

Zone	*Description*
Moderate to Low Risk Areas	
B and X (shaded)	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
C and X (unshaded)	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.
High Risk Areas	
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
AE	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
A1-30	These are known as numbered A Zones (e.g., A7 or 14). This is the base floodplain where the FIRM shows a base flood elevation (BFE).
AH	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
AO	River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
AR	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
A99	Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.
High Risk – Coastal Areas	
V	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.
VE, V1-30	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
Undetermined Risk Areas	
D	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.

3.9.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for hydrology and water quality impacts. A project would normally have a significant effect on the environment if the project would:

a. Violate any water quality standards or waste discharge requirements.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit 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).

c. 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.

d. 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.

e. 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.

f. Otherwise substantially degrade water quality.

g. 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.

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

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.

j. Inundation by seiche, tsunami, or mudflow.

In addition, the Orange County Municipal Stormwater Permit requires the following impacts be considered:

k. Impact storm water runoff either during project construction or post-construction?

l. Potentially discharge storm water pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas?

m. Potentially discharge storm water and affect the beneficial uses of the receiving waters?

n. Potentially significantly change the flow velocity or volume of storm water runoff and cause environmental harm?

o. Potentially significantly increase erosion on the project site or surrounding areas?

p. Potentially decrease the quality and quantity of recharge to groundwater?

q. Potentially impact pollutants in storm water runoff from the project site on any 303(d) listed waterbodies?

3.9.2 Determining Significance

The following guidelines for determining significance are based on the Initial Study Checklist questions of Appendix G of the State CEQA Guidelines. The general approach for environmental analysis is provided, followed by a more detailed narrative for each of the checklist thresholds discussed in this section.

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The environmental analysis for hydrology and water quality should use the questions provided in this flow chart as a base. Additional questions that pertain specifically to hydrology and water quality are provided under each step of the "General Approach for Environmental Analysis" flow chart.

Step 1: Determine the Existing Conditions

The existing setting section of hydrology and water quality analysis should describe the existing drainage patterns of the project site, any onsite or nearby waterways, and a discussion of any recent hydrology studies that have been prepared for the project site as part of the program EIR, if applicable.

- Is the project site developed or vacant? If it is vacant, is it in a natural state? Does water flow off-site, or is it absorbed into the ground? If it is developed, where does onsite runoff flow?

- Does onsite runoff flow into a water way that is listed as a 303(d) impaired water by the SARWQCB?

Step 2: Project Impacts

Once a project description has been established for a proposed project, the potential for hydrology and water quality impacts to occur can be determined. The potential for impacts is based on the following questions, provided to supplement the questions under Step 2 of the "General Approach for Determining Significance Flow Chart" in Chapter 1.

- Consider the "SARWQCB CEQA Review Guidelines" listed above. Would the project create conditions that may trigger a potentially significant impact under these guidelines?

- Consult the hydrology and water quality regulatory information in Appendix F. Does the proposed project meet the requirements for demonstrating compliance under the general construction permit or the MS4 permit?

- Would construction of the proposed project cause siltation and erosion?

- Would the project increase the amount of impermeable surface on the project site, increasing the amount of runoff when compared to existing conditions?

- Would the project be built in an area that is identified as a FEMA "High Risk Area" (see Table 3.9-2 and consult FEMA's "Map Service Center" Web site).

Step 3: Apply Plans, Policies, and Programs

Appendix C summarizes the PPPs for the City of Irvine. There are a number of standard conditions, municipal and zoning code requirements, and state or federal regulations that projects must follow in the City of Irvine. The City of Irvine will implement standard conditions that require projects to comply with flood hazard, water quality, and drainage requirements. These are meant to reduce or avoid project-related hydrology and water quality impacts.

Step 4: Determine Impact Significance

A hydrology or water quality study can help determine the level of significance for water quality and hydrology impacts. If the application of PPPs does not reduce potentially significant biological resource impacts, the remaining impacts are potentially significant.

Step 5: Formulate Mitigation

The implementation of a WQMP or a SWPPP typically reduces project impacts. When additional project impacts remain, mitigation measures for hydrology and water quality may require additional best management practices (BMPs). Additional mitigation measures, if necessary, should follow the requirements laid out in the "General Approach for Environmental Analysis" flow chart in Chapter 1.

Step 6: Determine Significance after Mitigation

As described in the flow chart in Chapter 1, a determination of project impacts after all mitigation measures, PPPs, Standard Conditions of Approval, and other restrictions and regulations have been implemented should be made. Any remaining significant and unavoidable impacts shall be identified. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

3.10 LAND USE AND PLANNING

City of Irvine Planning Areas

The City is divided into a series of master-planned communities or neighborhoods called planning areas (see Table 2.1-2 and Figure 2.1-1, *City of Irvine Planning Areas*), with each planning area having its own character and development goals.

Residential growth has been concentrated for the most part within the northern and central flatlands of the City, with some residential also occurring in the northern and southern hillside areas. Employment growth (e.g., commercial, retail, office, industrial) has been concentrated adjacent to regional transportation facilities (e.g., John Wayne Airport, I-5 and I-405, Irvine Station) on the western and eastern edges of the City (i.e., Planning Area 35-Irvine Spectrum, Planning Area 36-Irvine Business Complex).

Relevant Planning Programs

Land use issues can be divided into two general categories: land use compatibility and land use consistency. Land use compatibility addresses the compatibility of placement of new sensitive land uses (e.g., residential, parks, schools, nursing homes, hospitals) proximate to sources of air pollutants, odors, and noise and placement of new industrial/commercial land uses proximate to sensitive land uses, while land use consistency addresses the consistency or compliance of a proposed project with adopted goals and policies such as:

- City of Irvine General Plan
- City of Irvine Zoning Ordinance
- Airport Environs Land Use Plan for John Wayne Airport (AELUP)
- University of California Irvine Long Range Development Plan
- Local Coastal Program
- Orange County Central and Coastal Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP))
- Southern California Association of Governments (SCAG) Plans and Policies: The Regional Comprehensive Plan (RCP) and the Regional Transportation Plan (RTP) / Sustainable Communities Strategy (SCS).

3.10.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for land use and planning impacts. A project would normally have a significant effect on the environment if the project would:

a. Physically divide an established community.

b. 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.

c. Conflict with any applicable habitat conservation plan or natural community conservation plan.

3.10.2 Determining Significance

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The environmental analysis for land use and planning should look at the questions provided in this flow chart. Additional questions that pertain specifically to land use and planning impacts are provided under each step of the "General Approach for Environmental Analysis" flow chart.

Step 1: Determine the Existing Conditions

The following inquiries are designed to obtain an accurate assessment of the existing conditions for land use analysis:

- What are the existing land uses on the project site?
- What land uses are located adjacent to the site?
- What are the general plan and zoning designations for the site?
- Do other relevant planning programs listed above apply to the site?

Step 2: Project Impacts

The following inquires be used to help determine the proposed project's potential to cause land use compatibility impacts in the City of Irvine.

- Is the proposed project consistent with the General Plan and zoning designations for the project site?

- Would the proposed project cause incompatibilities related to noise, odor, safety hazards, or visual impacts? Be sure to consider differences in the physical scale of development, noise levels, and hours of operation.

- How does the proposed development fit with the existing uses and character of the surrounding developed and/or natural environment (threshold a)?

Consistency Analysis

Descriptions of consistency analysis with policy plans are provided below. Samples of consistency analysis with the General Plan and SCAG's RCP and RTP/SCS are provided in Tables 2.10-1 through 2.10-3. Consistency with the SCAG plans are only required when the project meets SCAG requirements for intergovernmental review (found in the Intergovernmental Review Procedures Handbook–November 1995, Section 15206 of the State CEQA Guidelines, and online at http://www.scag. ca.gov/igr/clist.htm). Please note that SCAG's policies contained in the RCP are advisory only.

Coastal Zone Consistency Analysis

Consistency analysis should be undertaken if a proposed project occurs within the 40-acre parcel in the Irvine Business Complex (Planning Area 36) that lies within the coastal zone. The analysis should refer to the development regulations outlined in Chapter 2-7 (Coastal Zone: Special Regulations for Development Located in Coastal Zone) of the Zoning Ordinance to determine consistency with development in the coastal zone.

Airport Environs Land Use Plan (AELUP) for John Wayne Airport (JWA) Consistency Analysis

Consistency analysis with the AELUP should be undertaken when a proposed project would occur within the designated areas of the AELUP for JWA. The analyst should refer to the development regulations outlined in the AELUP for JWA, General Plan, and IBC Vision Plan.[1]

University of California Irvine (UCI) Long Range Development Plan (LRDP) Consistency Analysis

UCI owns and operates a property along the east side of Jamboree Road between Campus Drive and Fairchild Road. According to the UCI 2007 LRDP, the site, known as North Campus—which is currently occupied by academic and support facilities, an arboretum, and a child development center—is planned to be redeveloped with up to 950,000 square feet of office/research space and 455 multifamily dwelling units by the year 2036 (UCI 2007). The LRDP includes land use, circulation, and other development-related goals..

City of Irvine General Plan and Zoning Ordinance Consistency Analysis

The proposed project's consistency with the General Plan and Zoning Ordinance should follow a side-by-side comparison of the General Plan policies that are applicable to the proposed project with a discussion of the consistency or nonconsistency of the policy and supportive analysis in a table format (see Table 3.10-1). The analyst should refer to the applicable development regulations outlined in the applicable chapters of the Zoning Ordinance to determine consistency with the Zoning Ordinance.

[1] The IBC Vision Plan outlines the City's policies and objectives for addressing residential and mixed-use development within the IBC, and it is an element of the City's General Plan (IBC Element).

Table 3.10-1
General Plan Consistency Analysis

Applicable City of Irvine General Plan Policies	*Project Consistency*
Land Use Element	
Objective A-1: City Identity – Preserve and strengthen Irvine's identity as a diverse and innovative community.	
Policy (a): Develop identifiable City edges, pathways, entry points, and landmarks, and conserve visual resources along the scenic corridors which characterize Irvine (p. A-9).	***Consistent or Inconsistent:*** Insert consistency or inconsistency analysis.
Policy (b): Use building masses and landscaping to create a sense of unity for the various components throughout the City (p. A-9).	***Consistent or Inconsistent:*** Insert consistency or inconsistency analysis.
Objective A-2: Economic Development – Promote viable commercial centers, successful manufacturing areas, and dynamic employment centers.	
Policy (a): Retain and attract manufacturing and industrial uses within designated business centers (p. A-10).	***Consistent or Inconsistent:*** Insert consistency or inconsistency analysis.
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 (e): Encourage maintenance of common areas by community associations and/or maintenance districts (p. A-14).	***Consistent or Inconsistent:*** Insert consistency or inconsistency analysis.
Circulation Element	
Objective B-1: Roadway Development – Plan, provide and maintain an integrated vehicular circulation system to accommodate projected local and regional needs.	
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 the City of Irvine or its sphere of influence, and which are under the City's jurisdiction (p. B-7) • 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. • LOS D or better shall be considered acceptable within all other areas.	***Consistent or Inconsistent:*** Insert consistency or inconsistency analysis.
Housing Element	
Objective C-2: Quality Design and Construction – Maintain quality design, siting, construction and maintenance while minimizing housing cost.	
Policy (d): Homeowner's Associations. Ensure adequate common area maintenance in neighborhoods through the use of homeowner's and/or community associations or the formation of maintenance districts (p. C-45).	***Consistent or Inconsistent:*** Insert consistency or inconsistency analysis.

Table 3.10-1
General Plan Consistency Analysis

Applicable City of Irvine General Plan Policies	*Project Consistency*
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). ***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 uses for new construction (p. D-5).	***Consistent or Inconsistent:*** Insert consistency or inconsistency analysis.

Source: City of Irvine General Plan.
Note: Please note that the policies outlined above are just a few of the policies in the various elements of the Irvine General plan and do not constitute the entire list of policies that would be applicable to a specific project. For a complete list of the most current and applicable policies, refer to the Irvine General Plan.

Regional Transportation Plan/Sustainable Communities Strategy and Regional Comprehensive Plan Consistency Analysis

Table 3.10-2 and Table 3.10-3 provide a sample side-by-side consistency analysis for the Draft Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) and RCP, respectively. The SCS incorporates the Orange County Transportation Authority (OCTA)/Orange County Council of Government's SCS (Subregional SCS) for Orange County, which was adopted by the Orange County Council of Governments (OCCOG) in June 2011. The advisory goals and policies of the RCP that may be applicable to a proposed project are generally provided by SCAG during the public review period of the environmental document, but may also be viewed on SCAG's Web site. A consistency review with SCAG policies would only be required when the project is of regional significance (e.g., General Plan Update).

Table 3.10-2
Consistency with SCAG's Draft Regional Transportation Plan / Sustainable Communities Strategy

SCAG Strategy	*Project Consistency*
RTP Policies	
1.Transportation investments shall be based on SCAG's adopted regional Performance Indicators	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
2. Ensuring safety, adequate maintenance, and efficiency of operations on the existing multi-modal transportation system should be the highest RTP priorities for any incremental funding in the region	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
3. RTP land-use and growth strategies in the RTP will respect local input and advance smart growth initiatives	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
4. Transportation demand management (TDM) and non-motorized transportation will be focus areas, subject to Policy 1	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
5. HOV gap closures that significantly increase transit and rideshare usage will be supported and encouraged, subject to Policy 1	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
6. Monitoring progress on all aspects of the Plan, including the timely implementation of projects, programs, and strategies, will be an important and integral component of the Plan	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Sustainable Communities Strategies	
Land Use Actions and Strategies Applicable to Local Jurisdictions	
Collaborate with local jurisdictions and agencies to acquire a regional fair share housing allocation that reflects existing and future needs	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Seek partnerships with state, regional and local agencies to acquire funding sources for innovative planning projects	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Update local zoning codes, General Plans, and other regulatory policies to accelerate adoption of land use strategies included in the RTP/SCS Plan Alternative	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Pursue joint development opportunities to encourage the development of housing and mixed-use projects around existing and planned rail stations or along high-frequency bus corridors, and in transit-oriented development.	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Working with local jurisdictions, identify resources that can be used for employing strategies to maintain and assist in the development of affordable housing.	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.

Table 3.10-2
Consistency with SCAG's Draft Regional Transportation Plan / Sustainable Communities Strategy

SCAG Strategy	*Project Consistency*
Consider developing healthy community or active design guidelines that promote physical activity and improved health	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Support projects, programs, policies and regulations to protect resources areas, such as natural habitats and farmland, from future development	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Transportation Network Actions and Strategies Applicable to Local Jurisdictions	
Cooperate with stakeholders, particularly county transportation commissions and Caltrans, to prioritize funding sources for preservation and maintenance of the existing transportation network.	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Encourage the development of new transit modes in our subregions such as BRT, rail, limited-stop service, and point-to-point express services utilizing the HOV and HOT lane networks.	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Encourage regional and local transit providers to develop rail interface services at Metrolink, Amtrak and high-speed rail stations.	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Prioritize transportation investments to support compact infill development that includes a mix of land uses and housing options, where appropriate, to maximize the benefits for existing communities, especially vulnerable populations, and to minimize any negative impacts.	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Explore and implement innovative strategies and projects that enhance mobility and air quality, including those that increase the walkability of communities and accessibility to transit via non-auto modes	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Collaborate with local jurisdictions to plan and develop residential and employment development around current and planned transit stations	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Collaborate with local jurisdictions to provide a network of local community circulators that serve new TOD and HQTAs, providing an incentive for residents and employees to make trips on transit	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Develop first-mile/last-mile strategies on a local level to provide an incentive for making trips by transit, bicycling or walking	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.

Table 3.10-2
Consistency with SCAG's Draft Regional Transportation Plan / Sustainable Communities Strategy

SCAG Strategy	*Project Consistency*
Encourage transit fare discounts and local vendor product and service discounts for residents and employees of TOD/HQTAs, or for a jurisdiction's local residents in general who have fare media	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Work with transit properties and local jurisdictions to identify and remove barriers to maintaining on time performance	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Transportation Demand Management (TDM) Actions and Strategies Applicable to Local Jurisdictions	
Develop comprehensive regional active transportation network along with supportive tools and resources that can help jurisdictions plan and prioritize new active transportation projects in their cities	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Support work-based programs that encourage emission reduction strategies	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Develop infrastructure plans and educational programs to promote active transportation options	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Encourage the development of telecommuting programs by employers through review and revision of policies that may discourage alternative work options	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Emphasize active transportation projects as part of complying with the Complete Streets Act (AB 1358)	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Transportation System Management (TSM) Actions and Strategies Applicable to Local Jurisdictions	
Work with relevant state and local transportation authorities to increase the efficiency of the existing transportation system	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Collaborate with local jurisdictions to develop regional policies regarding TSM	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Provide training opportunities for local jurisdictions on TSM strategies, such as Intelligent Transportation Systems (ITS)	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Collaborate with local jurisdictions to continually update the ITS inventory	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.

Table 3.10-2
Consistency with SCAG's Draft Regional Transportation Plan / Sustainable Communities Strategy

SCAG Strategy	*Project Consistency*
Collaborate with California Transportation Commissions (CTCs) to regularly update the county and regional ITS architecture	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
Clean Vehicle Actions and Strategies Applicable to Local Jurisdictions	
Support subregional strategies to develop infrastructure and supportive land uses to accelerate fleet conversion to electric technologies. The activities committed in the two subregions (Western Riverside COG and South Bay Cities COG) are put forward as best practices that others can adopt in the future.	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.

Source: Southern California Association of Governments (SCAG). 2011, December. Draft 2012 RTP, Regional Transportation Plan / Sustainable Communities Strategy Towards a Sustainable Future.
Note: Includes those SCAG RTP/SCS Strategies that are identified as applicable for local governments.

Table 3.10-3
Consistency with SCAG's Regional Comprehensive Plan

SCAG Policy	Project Consistency
Land Use And Housing Action Plan	
Policy LU-4: Local governments should provide for new housing, consistent with State Housing Element law, to accommodate their share of forecast regional growth.	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
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.	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
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 or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of non-applicability will suffice.
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: • 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 or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of nonapplicability will suffice.
Air Quality Action Plan	
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).	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of nonapplicability will suffice.
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).	***Consistent or Not Applicable:*** If consistent, provide analysis. If not applicable, a general statement of nonapplicability will suffice.

Source: 2008 SCAG Regional Comprehensive Plan.
Note: Please note that the policies outlined above are just a few of the policies in the RCP and do not constitute the entire list of policies. For a complete list of the most current RCP and related policies, refer to SCAG's website.

Step 3: Apply Plans, Policies, and Programs

The land use PPPs for Irvine include local and regional planning documents. Most of these are listed above under "Land Use Plans" and in Appendix C of this manual.

Step 4: Determine Impact Significance

Impacts are potentially significant when they would exceed land use significance thresholds, and PPPs or project design features are not able to reduce the impact to less than significant levels.

For impacts related to the division of an existing community, project design features or modifications to the proposed project design may reduce impacts to less than significant levels.

For impacts related to consistency of the proposed project with existing plans, the level of significance depends on the plan being analyzed. Plans such as the John Wayne Airport AELUP and the Zoning Code must be complied with. Other plans, such as SCAG's RCP, RTP, and CGV, do not require consistency, but the project should not be inconsistent when it can be avoided.

Step 5: Formulate Mitigation

Mitigation measures to reduce potentially significant impacts are created after it has been substantiated that an impact is significant. Mitigation measures must be feasible to be enforced and implemented by the project applicant, lead agency, or another responsible agency. A nexus must be demonstrated between the project impact and the proposed mitigation measure.

Step 6: Determine Significance after Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

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3.11 MINERAL RESOURCES

For the purpose of CEQA analysis, mineral resources refer to aggregate resources that consist of sand, gravel, and crushed rock. Aggregate resources provide bulk and strength in construction materials such as portland cement and asphaltic concrete. Other nonfuel mineral resources include metals such as gold, silver, iron, and copper and industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone.

Relevant Planning Programs

The California Geological Survey (CGS), formerly the California Division of Mines and Geology, classifies the regional significance of mineral resources in accordance with the California Surface Mining and Reclamation Act (SMARA) of 1975 and assists CGS in the designation of lands containing significant aggregate resources. The State Geologist is responsible for classifying areas within California that are subject to urban expansion or other irreversible land uses. SMARA also allowed the State Mining and Geology Board (SMGB), after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance.

Classification into Mineral Resource Zones (MRZ) is completed by the State Geologist in accordance with the SMGB's priority list and according to the presence or absence of significant mineral resources. The MRZ categories include:

- MRZ-1: Adequate information indicates that no significant mineral deposits are present or likely to be present, or where it is judged that little likelihood exists for their presence.
- MRZ-2: Adequate information indicates that significant mineral deposits are present, or likely to be present, and development should be controlled.
- MRZ-3: The significance of mineral deposits cannot be determined from the available data.
- MRZ-4: There is insufficient data to assign any other MRZ designation.

Of the four categories, lands classified as MRZ-2 are of the greatest importance. Such areas are underlain by demonstrated mineral resources or are located where geologic data indicate that significant measured or indicated resources are present. MRZ-2 areas are designated by SMGB as being "regionally significant." Such designations require that a lead agency's land use decisions involving designated areas be made in accordance with its mineral resource management policies (if any exist) and that it consider the importance of the mineral resource to the region or the state as a whole, not just to the lead agency's jurisdiction.

The MRZ classification areas within the City of Irvine are shown in the CGS mineral resources map of Orange County, known as the "Generalized Mineral Land Classification of Orange County, California: Aggregate Resources Only." The portion of the map that encompasses the City of Irvine and general vicinity is reproduced as Figure 3.11-1, *Mineral Resource Zones*. As shown in Figure 3.11-1, the City of Irvine is made up of MRZ-1 and MRZ-3. No areas are designated as MRZ-2.

3.11.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for mineral resource impacts. A project would normally have a significant effect on the environment if the project would:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
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.

3.11.2 Determining Significance

The method for determining mineral resource impacts is based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual.

General Approach

The general steps for determining significance should follow the same steps as described in the flow chart in Chapter 1. Additional questions are provided for each step.

Step 1: Determine the Existing Conditions

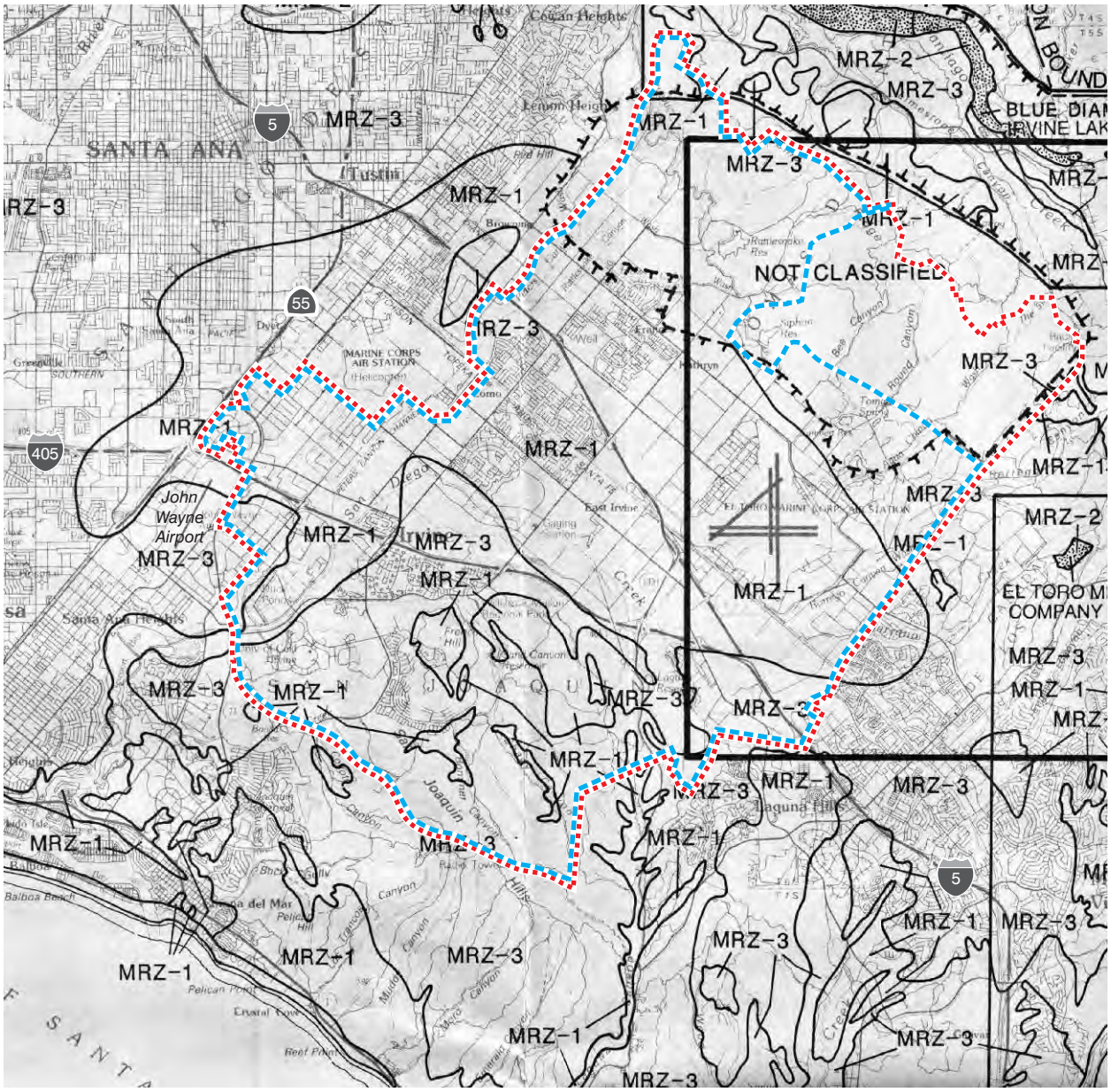
The discussion of mineral resources for the existing conditions should reference the "Generalized Mineral Land Classification of Orange County, California: Aggregate Resources Only" map (see also Figure 3.11-1). The MRZ classification should be stated.

Step 2: Project Impacts

Because the City of Irvine has no MRZ-2 classified areas, there is a low likelihood for mineral resources to be impacted. If the site is classified as MRZ-1, there are no significant mineral resources onsite. However, in areas that are classified as MRZ-3, there is not enough data to determine whether or not mineral resources are significant. For MRZ-3, the potential for significant mineral resource to be onsite, and whether extraction would be locally or regionally significant, should be determined:

- Is the project site developed and/or surrounded by urban development that is not compatible with mineral resource extraction?
    - If yes, the likelihood for mineral resource extraction to occur onsite is low and impacts would not occur.
    - If no, what are the project site's land use and zoning designations? Do they allow resource extraction?
        - If the site is not intended for resource extraction and it would be incompatible with surrounding land uses, there is no potential for mineral resource to be impacted.
        - If the zoning or land use designation would allow for resource extraction, Use the "Generalized Mineral Land Classification of Orange County, California: Aggregate Resources Only" map or Figure 3-11.1, existing EIRs for the planning area, and the surrounding land uses to determine whether mineral resources could exist and whether their extraction would be locally or regionally important.

Mineral Resource Zones



EXPLANATION

OUTER BOUNDARY OF AREAS SUBJECT TO URBANIZATION

Boundaries established from data supplied by the Office of Planning and Research with modifications developed from information supplied by local government and other sources. Hachures lie within area undergoing urbanization

Locations of the Revised Mineral Land Classification maps (Plates 2 and 3) and the Designated Areas Urbanized maps (Plates 4, 5, and 6).

Permitted PCC aggregate pits.

City of Irvine Boundary

City of Irvine Sphere of Influence

MINERAL RESOURCE ZONE (MRZ) BOUNDARIES

MRZ-1

MRZ-1 Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

MRZ-2 Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.

MRZ-3 Areas containing mineral deposits the significance of which cannot be evaluated from available date.

MRZ-4 Areas where available information is inadequate for assignment to any other MRZ zone.

0 3
Scale (Miles)

Source: California Division of Mines and Geology.

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Step 3: Apply Policies, Plans, and Programs

There are no standard conditions or policies that specifically apply to mineral resources. However, the City's municipal code has a requirement that "…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" (Title 3, Division 4, Chapter 1 of the City of Irvine Municipal Code).

Step 4: Determine Impact Significance

Since Irvine does not have any areas classified as MRZ-2, there is little potential for impacts to mineral resources to occur. If the proposed project is on a site that would allow for mineral extraction under the land use or zoning designations, the project impact would only be significant if it can be determined that there are enough mineral resources to make them locally or regionally significant. The existing CEQA documents for the planning area in which the project is located should be consulted.

Step 5: Formulate Mitigation

It is unlikely mitigation measures would be needed for mineral resources. If so, they must follow the criteria under Step 5 in Chapter 1 of this manual.

Step 6: Determine Significance After Mitigation

As stated above, it is unlikely that significant mineral resource impacts would occur within the City of Irvine. In the event that impacts are significant, the criteria under Step 6 in Chapter should be followed when mitigation measures are written for mineral resource impacts.

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3.12 NOISE

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.

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.[1]

Annoyance is the most common issue regarding community noise. 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 (USEPA 1974). However, elevated noise levels can result in physical damage to hearing. Physical damage to hearing begins at prolonged exposure to noise levels higher than 85 dBA (CCR, Title 29, Chapter 27, Part 1910).

3.12.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for noise. A project would normally have a significant effect on the environment if the project would result in:

a) 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.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

[1] L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered equivalent.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the 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, expose people residing or working in the project area to excessive noise levels.

f) For a project within the vicinity of a private airstrip, expose people residing or working the project area to excessive noise levels.

3.12.2 Determining Significance

General Approach

Noise is typically objectionable because it is disturbing or annoying. Depending on the magnitude, frequency, and duration of noise generation, noise can affect health and quality of life. Certain land uses are particularly sensitive to noise and vibration. Noise- and vibration-sensitive land uses include residential land uses, schools, hospitals, libraries, and open space/recreational areas where quiet environments are necessary for enjoyment, public health, and safety. Sensitivity to noise/vibration increases during the evening and at night. Noise and vibration can interfere with sleep, speech, and television/radio and cause annoyance. Commercial and industrial uses are generally not considered noise- or vibration-sensitive land uses.

Individuals have differing sensitivities to noise. In addition, people tend to compare an intruding noise with existing background noise levels. When the noise occurs also affects people's perception of the noise event. Consequently, the City of Irvine General Plan and Municipal Code define the City's policies regarding noise generation and noise compatibility for these sensitive land uses. The Noise Element of the General Plan establishes policies that are used to establish design criteria for siting noise-sensitive land uses proximate to major sources of noise (e.g., freeways, arterials, airports, railroads) to minimize noise exposure, while the City's Municipal Code identifies maximum permissible sound level limits that can be generated at a property (stationary noise) to prevent a noise nuisance.

Step 1: Determine the Existing Conditions

The existing conditions section should include a discussion on the existing ambient noise environment, location of noise-sensitive land uses proximate to the project site, and applicable regulations for noise and vibration control. .

Establishing Baseline Noise Levels

The baseline ambient noise environment can be established by the following methods:

- Ambient Noise Monitoring: can be conducted to determine existing ambient and background noise levels and calibrate noise prediction models.

- Noise Modeling: can be conducted to determine ambient noise based on traffic and/or train noise modeling. The Federal Highway Administration (FHWA) has released traffic noise models that can calculate average noise levels (L_{eq}, L_{dn}, CNEL) based on roadway characteristics such as traffic volumes, speed limits, and fleet mix. FHWA models include the FHWA Traffic Noise Model (TNM)

and the FHWA Highway Traffic Noise Prediction Model. The Federal Transit Administration (FTA) and the Federal Railroad Administration (FRA) have released noise models that calculate average and maximum noise levels from railroad noise (e.g., train engine, rail noise, and train horns). These include the FRA Train Horn Model. Other models may be available to calculate noise from transportation sources.

- Other Sources: In the absence of ambient noise measurements and noise modeling, data may be available from previous noise studies conducted in the City, including the City of Irvine General Plan.

Factors to Consider

Describing Noise and Noise Impacts

Noise and vibration impacts should be described in terms of the following noise and vibration descriptors, as applicable:

- Magnitude of noise/vibration (amplitude)
- Pitch (frequency of noise/vibration)
- Duration of the noise/vibration event
- Frequency of occurrence of noise/vibration (intermittent vs. constant)
- Proximity to sensitive-receptors

Proximity to High Volume Roadways

Traffic noise is typically the primary source of noise that affects noise-sensitive land uses. Table 3.12-1 approximates noise levels from traffic at various speed limits and volumes to assist planners when considering placement of new noise-sensitive land uses according to the noise compatibility standards in Table 3.12-2. Figure 3.12-1 shows the approximate distance to the 65 dBA CNEL noise contour line from several major arterials in the City based on the City's General Plan. Proximity to other major sources of noise including railroad or loud stationary sources of noise should also be considered.

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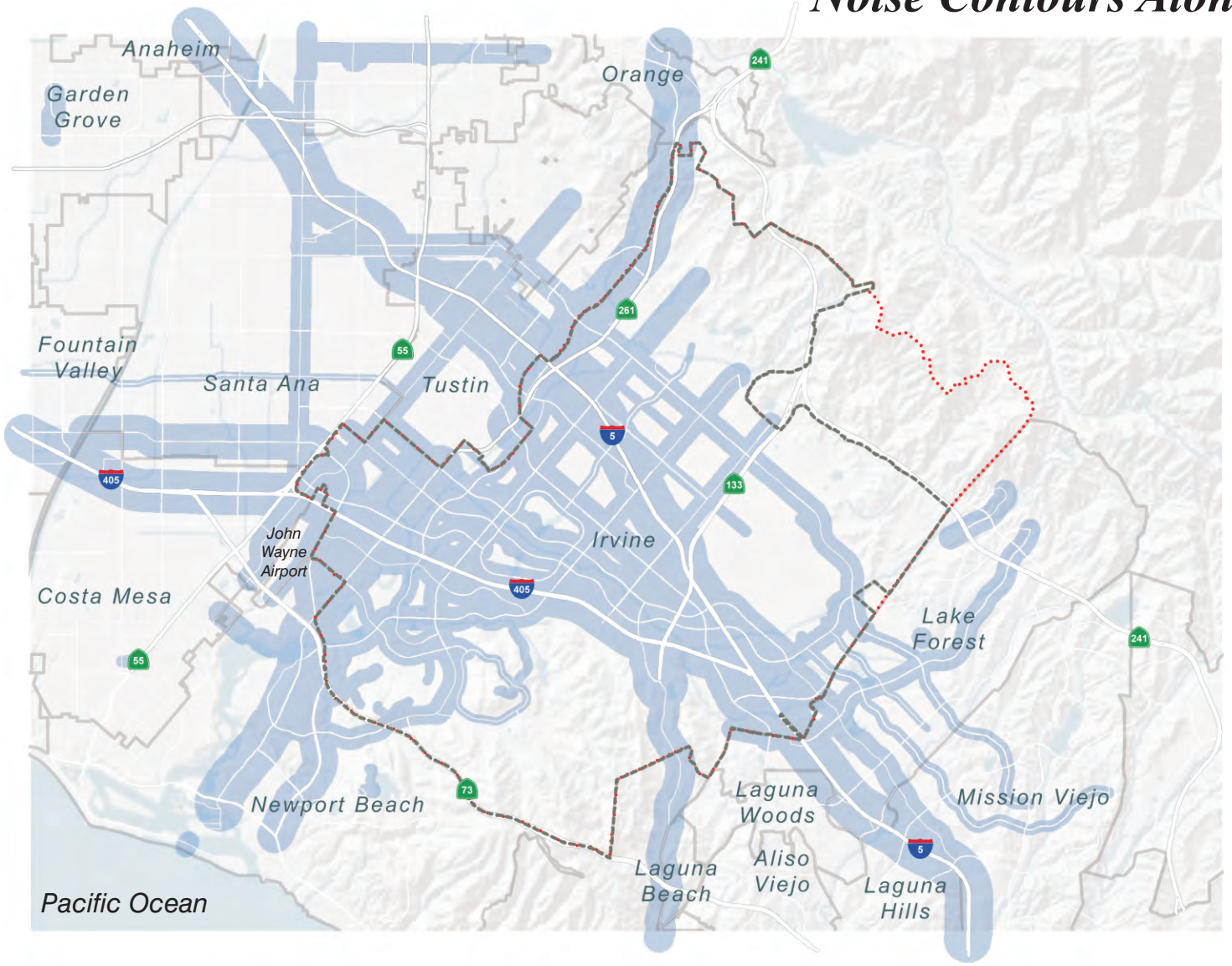
Noise Contours Along Major Roadways



LEGEND

- Ambient Noise Environment Buffers
- City of Irvine Boundary
- City of Irvine Sphere of Influence

0 3
Scale (Miles)

Source: SCAG 2007; SCAG 2008; City of Irvine 2011

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Table 3.12-1
Estimated Traffic Noise Levels

Speed Limit	*Daily Traffic Volumes*	*Noise Level at 50 Feet from the Roadway Centerline (dBA CNEL)*	*Approximate Distance from the Roadway Centerline to the 65 dBA CNEL Noise Contour*
25 mph	1,000	58	17 feet
	5,000	65	50 feet
	10,000	68	79 feet
	20,000	71	125 feet
	50,000	75	231 feet
30mph	1,000	59	20 feet
	5,000	66	59 feet
	10,000	69	93 feet
	20,000	72	148 feet
	50,000	76	272 feet
35 mph	1,000	59	20 feet
	5,000	66	59 feet
	10,000	69	94 feet
	20,000	72	149 feet
	50,000	76	275 feet
40 mph	1,000	60	24 feet
	5,000	67	69 feet
	10,000	70	109 feet
	20,000	73	174 feet
	50,000	77	320 feet
45 mph	1,000	61	27 feet
	5,000	68	79 feet
	10,000	71	126 feet
	20,000	74	200 feet
	50,000	78	369 feet
50 mph	1,000	62	31 feet
	5,000	69	91 feet
	10,000	72	144 feet
	20,000	75	229 feet
	50,000	79	421 feet

Table 3.12-1
Estimated Traffic Noise Levels

Speed Limit	*Daily Traffic Volumes*	*Noise Level at 50 Feet from the Roadway Centerline (dBA CNEL)*	*Approximate Distance from the Roadway Centerline to the 65 dBA CNEL Noise Contour*
55 mph	1,000	63	35 feet
	5,000	70	103 feet
	10,000	73	164 feet
	20,000	76	260 feet
	50,000	80	478 feet

Source: Federal Highway Administration, Highway Traffic Noise Prediction Model. Based on a simple lane configuration with a fleet mix of 92% light duty automobiles, 3% medium duty trucks, and 5% heavy duty trucks. Assumes 73% of traffic occurs between the hours of 7:00 AM to 10:00 PM, 13% of traffic occurs between the hours of 7:00 PM and 10:00 PM, and 14% of traffic occurs between the hours of 10:00 PM to 7:00 AM.

Proximity to John Wayne Airport

Noise from aircraft at the John Wayne Airport (JWA) is produced from takeoffs, flyovers/overflights, approaches, and landings. Each of these events results in noise exposure to sensitive receptors near the airport. The California Public Resources Code, Section 21096, requires that when preparing an Environmental Impact Report for any project within an airport influence area, as defined by an Airport Land Use Compatibility Plan, the lead agency shall utilize the California Airport Land Use Planning Handbook as a technical resource with respect to airport noise and safety compatibility issues. The basis for compatibility zone delineation for airports is the CNEL contours created with the Federal Aviation Administration Integrated Noise Model for private and public airports. Figure 3.12-2, *John Wayne Airport Noise Impact Zones*, shows the noise contours for planning purposes. Noise-sensitive developments within the 60 dBA CNEL contour of the airport also need to evaluate noise impacts for single-event noise based on the City's 55 dBA $L_{max}(10)$ indoor noise standard.

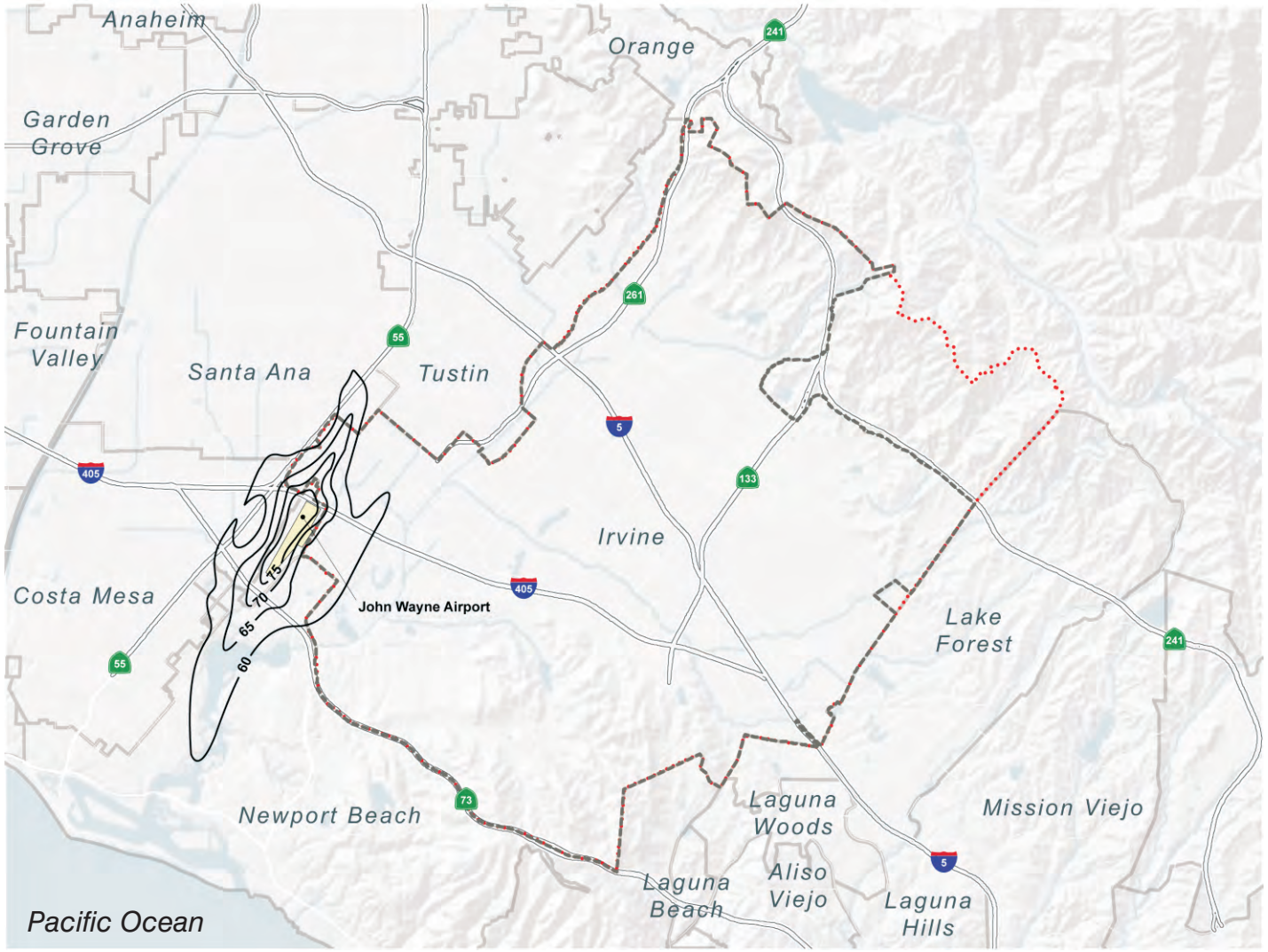
Step 2: Project Impacts

If applicable, changes in the ambient noise environment can be established by noise modeling. The modeling tools referenced above could be used to predict future noise levels. For noise and vibration, impacts are based on the following:

Land Use Compatibility Criteria

The noise standards specified in the Noise Element of the City of Irvine General Plan provide guidance for evaluating a proposed land use based on the exterior noise environment. Based on the noise compatibility criteria, the City has developed policies to ensure land use compatibility when placing new land uses. The City's policies for exterior and interior noise compatibility for noise-sensitive portions of a project are shown in Table 3.12-2. For noise-sensitive uses that contain habitable dwellings, the Noise Element establishes both exterior and interior noise level standards. Noise-sensitive exterior uses are limited to the private yards of single-family homes and to private patios of multifamily units that are used to enter and exit the units. However, multifamily developments with balconies that do not meet the 65 dBA CNEL exterior noise level criteria are required to provide occupancy disclosure notices to all future tenants regarding potential noise impacts.

John Wayne Airport Noise Contours



LEGEND

- City of Irvine Boundary
- City of Irvine Sphere of Influence

0 3
Scale (Miles)

Source: SCAG 2007; SCAG 2008; City of Irvine 2011

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Table 3.12-2
City of Irvine Interior and Exterior Noise Compatibility Standards

Land Use Categories		*Energy Average (dBA CNEL)*	
Categories	*Uses*	*Interior1*	*Exterior2*
Residential	Single family Multifamily	45[3] / 55[4]	65[5]
	Mobile Home	–	65[6]
Commercial/Industrial	Hotel, motel, transient lodging	45	65[7]
	Commercial, retail, bank, restaurant	55	–
	Office building, professional office, research and 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 UBC.
[4] Noise level with open windows, if they are used to meet natural ventilation requirement.
[5] Multifamily 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.
[6] Exterior noise level such that interior noise level will not exceed 45 dB CNEL.
[7] Except those areas affected by aircraft noise.

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 affected by stationary noise sources. For residential properties, noise generated offsite is prohibited from exceeding 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 at the property line. For events with shorter duration, these noise levels are adjusted upward accordingly, as shown in Table 3.12-3.

Table 3.12-3
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.
Notes:
Noise standards shall be reduced by 5 dB for impact noise, 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 3.12-2 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. 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.
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.

Aircraft Noise Compatibility Standards

As a vehicle approaches, passes by, and then recedes into the distance, the sound level rises, reaches a maximum, and then fades into the background noise. The sound level reached during this pass-by event is called single-event noise. Single-event noise is important for determining the maximum amount of noise that would result in nighttime awakenings and/or classroom speech interruptions.

The City requires, as part of the Noise Element, that any sensitive land uses in the 60 dBA CNEL contour for aircraft noise sources also comply with the City's single-event noise standard. The single-event noise standard is above and beyond what other jurisdictions and agencies have adopted and is a supplemental noise criteria. In other words, the City's single-event noise threshold is in addition to the Title 21 and Title 24 interior noise standards of 45 dBA CNEL. This standard is in terms of the $L_{max}(10)$ noise level, which is the loudest 10 percent of aircraft noise events. The City requires the indoor $L_{max}(10)$ noise level for residences to be less than 65 dBA during daytime hours (7:00 AM to 7:00 PM) and less than 55 dBA during evening and nighttime hours (7:00 PM to 7:00 AM). Since the loudest noise associated with aircraft is essentially the same during the day or evening, homes must be constructed to comply with the more stringent 55 dBA criteria. The $L_{max}(10)$ levels cannot be forecast using computer models or other analytical tools and must be measured for a given time.

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.

Vibration

Vibration Annoyance

Groundborne noise is the vibration of floors and walls that may cause rattling of items such as windows or dishes on shelves, or a rumbling noise. The rumbling is created by the motion of the room surfaces, which act like a giant loudspeaker. The FTA provides criteria for acceptable levels of groundborne vibration based on the relative perception of a vibration event for vibration-sensitive land uses (see Table 3.12-4).

Table 3.12-4
Groundborne Vibration and Noise Impact Criteria – Human Annoyance

Land Use Category	*Max Lv (VdB)[1]*	*Description*
Workshop	90	Distinctly felt vibration. Appropriate to workshops and nonsensitive areas
Office	84	Felt vibration. Appropriate to offices and nonsensitive areas.
Residential – Daytime	78	Barely felt vibration. Adequate for computer equipment.
Residential – Nighttime	72	Vibration not felt, but groundborne noise may be audible inside quiet rooms.

Source: FTA 2006
1 As measured in 1/3-octave bands of frequency over the frequency ranges of 8 to 80 Hz.

Vibration-Related Structural Damage

The level at which groundborne vibration is strong enough to cause structural damage has not been determined conclusively. The most conservative estimates are reflected in the FTA standards, shown in Table 3.12-5. Vibration-related problems generally occur due to resonances in the structural components of a building. The maximum vibration amplitudes of the floors and walls of a building will often be at the resonance frequencies of various components of the building. That is, structures amplify groundborne vibration. Wood-frame buildings, such as typical residential structures, are more easily excited by ground vibration than heavier buildings. According to the Caltrans's "Transportation Related Earthborne Vibration" (2002), extreme care must be taken when sustained pile driving occurs within 25 feet of any building; the threshold at which there is a risk of architectural damage to normal houses with plastered walls and ceilings is 0.2 in/sec.

Table 3.12-5
Groundborne Vibration and Noise Impact Criteria – Structural Damage

Building Category		PPV (in/sec)	VdB
I.	Reinforced concrete, steel, or timber (no plaster)	0.5	102
II.	Engineered concrete and masonry (no plaster)	0.3	98
III.	Nonengineered timber and masonry buildings	0.2	94
IV.	Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA 2006
RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second.

Screening Criteria

Screening criteria are available for noise based on standards adopted by the City of Irvine. The following screening criteria provide assistance in responding to the City's initial study checklist questions and can help determine if further study is needed to determine whether a significant noise or vibration impact could potentially occur. CEQA screening criteria are not intended as a bright-line threshold to indicate significant impacts; rather, they provide additional guidance to determine when impacts would not occur or are *de minimus* so that a detailed analysis is not necessary.

Traffic Noise

The traffic noise thresholds used by the City are based on human tolerance to noise (see Table 3.12-6) and are widely used for assessing traffic noise impacts. In general, people tend to compare intruding noise with 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 1998). Consequently, the noise threshold for 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 1998).

Table 3.12-6
Change in Sound Pressure Level, dB

Change in Apparent Loudness	
± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies and Hansen 1988.

Noise Compatibility

The noise standards specified in the City of Irvine Noise Element are used to evaluate the acceptability of the noise levels for noise compatibility purposes (see Table 3.12-2). In addition, if the project is within the airport influence area of John Wayne Airport, 24-hour and single-event noise from aircraft should also be evaluated in accordance with the interior noise requirements of Title 21 of the California Code of

Regulations (e.g., 45 dBA CNEL) and the City's 55 dBA $L_{max}(10)$ single-event supplemental noise criteria.

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 3.12-3).

Construction

The Noise Ordinance regulates the timing of construction activities and includes special provisions for sensitive land uses. The potential for construction noise impacts to be objectionable depends on the magnitude of noise generated by the construction equipment, the frequency of noise sources during the construction day, and total duration of construction activities.

Vibration

The FTA vibration criteria are used to evaluate vibration annoyance and structural damage (see Tables 2.12-4 and 2.12-5). The potential for construction-related vibration annoyance impacts to be objectionable depends on the magnitude of vibration generated by the construction equipment, the frequency of occurrence of the vibration during the construction day, and total duration of construction activities.

Step 3: Apply Plans, Policies, and Programs

The City of Irvine lists the PPPs in each topical section of an EIR, usually preceding or at the start of the impact analysis section. The PPPs include local, state, and federal regulations, including the City's Standard Conditions of Approval. PPPs may reduce the level of impact significance and would preclude the need for additional analysis. This must be substantiated in the environmental analysis.

Step 4: Determine Impact Significance

Once it has been determined that a project impact exceeds the significance criteria and existing PPPs are not able to reduce the significance, these impacts are potentially significant. In some cases, an impact may not be significant if it is consistent with the general plan, the City's vision for the area, or other existing plans or guidelines for the project site. Significance conclusions must be substantiated in the analysis.

Step 5: Formulate Mitigation

For noise, mitigation measures are usually based on the technical analysis. Appendix D lists sample mitigation measures for noise and vibration control.

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

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3.13 POPULATION AND HOUSING

The Irvine General Plan, including the Housing Element, and other adopted population growth policies and projection tools (e.g., Orange County Projections, Regional Housing Needs Assessment) include forecasts of population, housing, and employment trends. Population and housing projections are used to plan the infrastructure and level of service required to support the future population of the City. When actual growth exceeds the projections, deficiencies in these systems and services may result. According to State CEQA Guidelines Section 15064(e): "Economic and social changes resulting from a project shall not be treated as significant effects on the environment. Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment." Population, housing, and employment growth are examples of economic and social changes, which may cause physical changes in the environment. The impacts of those physical changes must be analyzed.

Local and Regional Planning Projections

The project area's demographics are best examined in the context of existing and projected population, housing and employment for the Orange County region and the City of Irvine. Information on population, housing, and employment for the project area is available from several sources, as discussed below.

Orange County Projections

Orange County agencies, including the City of Irvine, have executed a Memorandum of Understanding with the Orange County Council of Governments (OCCOG) to contract with the Center for Demographic Research at California State University, Fullerton, to develop and periodically update demographic projections for Orange County.

OCCOG approved the most recent update to the Orange County Projections, OCP-2010, in January 2011. OCP-2010 growth projections present the most updated demographic projections for Orange County cities and unincorporated areas for five-year intervals from 2010 through 2035.

Table 3.13-1 provides a summary of the forecasts for population, housing, and employment for Orange County and the City of Irvine between 2010 and 2035 that are included in the OCP-2010 projections. Note that the jurisdictional boundaries used in the OCP-2010 projections were those as of 2008.

Table 3.13-1
OCP-2010 Projections for Orange County and the City of Irvine, 2010–2035

	2010	*2035*	*Change 2010–2035*	*% Change 2010–2035*
Total Population				
Orange County	3,019,356	3,421,228	401,872	11.7%
City of Irvine	215,644	304,242	88,598	29.1%
Total Dwelling Units				
Orange County	1,050,330	1,180,929	130,599	11.1%
City of Irvine	84,189	120,158	35,969	29.9%
Total Employment				
Orange County	1,490,296	1,778,845	288,549	16.2%
City of Irvine	209,152	291,813	82,661	28.3%

Source: CDR 2012. Based on the latest iteration of Orange County projections provided by CDR using 2010 census data.

As shown in Table 3.13-1, between 2010 and 2035 the population of the City of Irvine is projected to increase by 88,598 persons, or 29.1 percent of its 2010 population; the number of residential units is forecast to increase by 35,969 units, or 29.9 percent of the unit count in 2010; and employment in the City is projected to increase by 82,661 jobs, or 28.3 percent of 2010 employment.

The Center for Demographic Research at California State University, Fullerton, is currently working on the next iteration of the OCP, which will update the above figures to reflect data from the 2010 U.S. Census. At the time this manual was prepared, data and an updated report reflecting Census data were not yet approved by the CDR (CDR 2012).

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. Jobs/housing ratio is one indicator of a project's effect on growth and quality of life in the project area. No ideal jobs/housing ratio is adopted in state, regional, or city policies; jobs/housing goals and ratios are advisory only. The Southern California Association of Governments (SCAG) applies the jobs/housing ratio at the regional and subregional level as a tool for analyzing the fit between jobs, housing, and infrastructure.

Currently in the City of Irvine and Orange County as a whole, jobs are more readily available than housing opportunities. According to OCP-2010 projections, the County provided 1.42 jobs per household in 2010. In the future, Orange County is expected to remain jobs-rich as a result of economic and demographic forces expected within the planning period. OCP-2010 projects the County's jobs/housing ratio at 1.51 in 2035.

Orange County and the City of Irvine have exhibited similar historical growth trends, with both County and City housing growth lagging population and employment growth. OCP-2010 projects that Irvine will outpace the County's housing and employment growth rate between 2010 and 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 coastal location.

Related Planning Programs

In addition to the OCP, the following adopted projections, plans, and policies address the future of the City of Irvine and provide benchmarks for evaluating the potential population, housing, and employment impacts of a proposed project.

- Regional Housing Needs Assessment (RHNA)
- SCAG Regional Transportation Plan
- City of Irvine General Plan and Housing Element

3.13.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for determining population and housing impacts. A project would normally have a significant effect on the environment if the project would:

a. 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).

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

3.13.2 Determining Significance

The following guidelines for determining significance are based on the Initial Study Checklist questions of Appendix G of the State CEQA Guidelines.

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The environmental analysis for population and housing should take into account the questions provided in this flow chart. Additional questions or points of discussion that pertain specifically to population and housing are provided for each step in this section.

Step 1: Determine the Existing Conditions

For population and housing analysis, it is important to not only determine the existing site conditions (e.g., is there housing onsite?), but also the existing conditions of the City.

- Is there housing onsite? What type?
- What is the onsite population?
- What are the City's existing and projected population, housing, and employment inventories?

Step 2: Project Impacts

The proposed project's impacts are based on whether or not the project would require existing housing and/or populations to be removed from the site and if it would substantially contribute to the City's projected population, housing, and employment inventories. The proposed project's impacts should be based on the following questions:

For threshold a:

- Does the proposed project cause an increase in resident/worker population?
    - If yes, would the resulting population increase be substantial?
    - Does it change the jobs/housing ratio? If a project alters the existing jobs/housing ratio, it does not necessarily cause a significant impact. The change in the jobs/housing ratio should be discussed in the impact analysis.
    - If no, or if the population increase would be negligible, then there would be no or less than significant impacts.

- Does the project extend utilities, roadways, or public services to an area that is currently not served and has no existing population?

POPULATION AND HOUSING

For thresholds b and c:

- Does the proposed project require the removal of existing homes or populations from the project site?
    - If the site is vacant or uninhabited, then there would be no impacts.
    - If the site is occupied, impacts are potentially significant.

Step 3: Apply Plans, Policies, and Programs

There are no population and housing PPPs that are required to be followed by a proposed project. However, the General Plan Housing Element and the Affordable Housing Implementation Procedure (Chapter 2-3 of the City's Zoning Code) contain policies that guide housing development in the City, as directed by RHNA. For example, the City's Inclusionary Housing Ordinance should be considered in the analysis of a proposed project that consists of 50 residential units or more, as it requires a minimum of 15 percent of the total units that are constructed to be affordable units. The breakdown of income categories for the 15 percent, along with other requirements and guidelines, are detailed in the Zoning Code.

In the event that relocation is required, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601), and regulations 49 CFR part 24 should be referenced.

Step 4: Determine Impact Significance

The Population and Housing section of the environmental document being prepared for the proposed project should examine the potential for direct and indirect socioeconomic impacts of a proposed project on the City of Irvine, County, and region, including changes in population, employment, and demand for housing, particularly housing cost/rent ranges defined as "affordable." The latest data and report for the OCP should be used as a reference point for discussing population, housing, and employment growth and trends.

For threshold a, population and housing impacts occur when the proposed project would cause substantial direct or indirect population growth that has not been accounted for in the General Plan or an existing Planning Area plan. If the proposed project is consistent with the General Plan or the City's vision for the area, as documented through Planning Area plans and their supporting environmental analyses, the impact would likely be less than significant. All significance conclusions must be substantiated in the analysis.

For threshold b, if populations and households are removed from the project site, and the site is not already designated for residential land uses, the impacts would be significant.

Step 5: Formulate Mitigation

Mitigation measures to reduce potentially significant impacts are created after it has been substantiated that an impact is significant. Mitigation measures must be feasible to be enforced and implemented by the project applicant, lead agency, or another responsible agency. A nexus must be demonstrated between the project impact and the proposed mitigation measure. Potential mitigation could include revising the proposed land uses to improve jobs/housing balance.

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would

reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

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3.14 PUBLIC SERVICES

As cities grow, the increasing population creates a greater demand for public services including police protection, fire protection, school services, and other public services, such as libraries. When a proposed project includes the construction of residential units it increases the population in the area. The increased population creates a new demand for services that can result in the need to construct new buildings to house these services. The construction and use of these buildings may cause environmental impacts and may indirectly increase residential development in the area. The public services discussion per CEQA should determine how much demand a proposed project would create on an existing level of service for each public service provider and whether this demand would cause significant environmental impacts. Growth-inducing impacts may be discussed in this section or in a separate section of an EIR. A brief discussion of Irvine's public service providers is provided.

Fire Service

Fire protection in the City of Irvine is provided by the Orange County Fire Authority (OCFA). The majority of the City is in Division 2 of the OCFA, but there are portions in Division 4 and 5 as well. The OCFA serves all of the unincorporated portions of the county and some cities with which they have service agreements. Table 3.14-1 shows the OCFA fire stations that serve Irvine. The divisions and station locations are also shown in Figure 3.14-1, *OCFA Fire Stations in Irvine*.

Table 3.14-1
OCFA Stations Serving Irvine

Station	***Location***
OCFA Division 2	
Station 4	2 California Avenue
Station 6	3180 Barranca Parkway
Station 20	6933 Trabuco Road
Station 26	4691 Walnut Avenue
Station 28	17862 Gillette Avenue
Station 36	301 East Yale Loop
Station 47	47 Fossil Road
OCFA Division 4	
Station 27	12400 Portola Springs Road
Station 55	4955 Portola Parkway
OCFA Division 5	
Station 38	26 Parker
Station 51	18 Cushing

Source: OCFA 2011.

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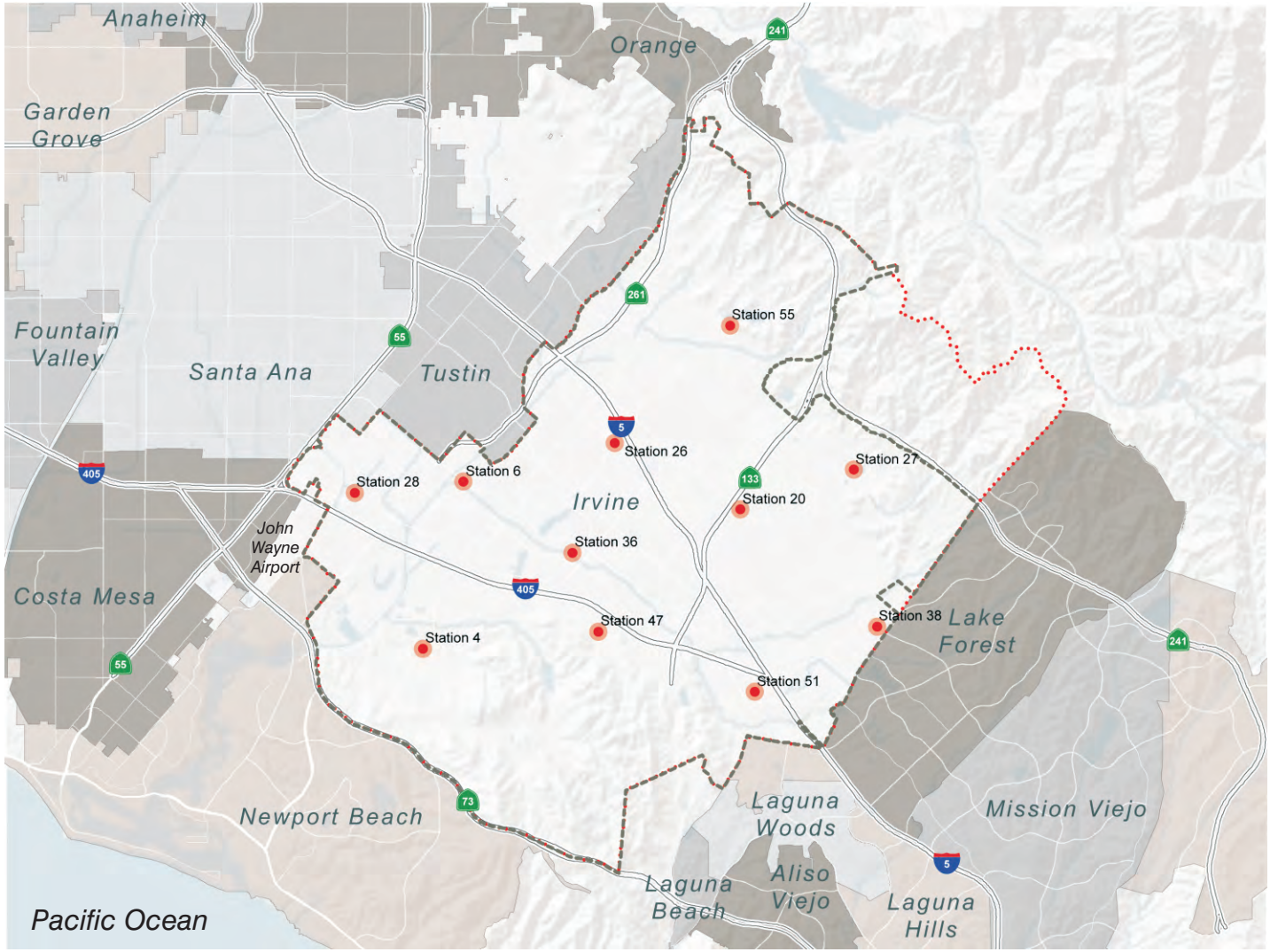
OCFA Fire Stations in Irvine



LEGEND

- City of Irvine Boundary
- City of Irvine Sphere of Influence
- OCFA Fire Stations

0 3
Scale (Miles)

Source: SCAG 2007; SCAG 2008; City of Irvine 2011

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OCFA Response Time Guidelines

The OCFA has guidelines for the provision of services when an emergency call is received until the first unit is on scene:

- First-in engines should arrive on-scene to medical aids and/or fires within 5 minutes, 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, 90 percent of the time.
- Response times tie in with workload. A unit should have less than 3,500 responses per year to be a reliable asset to meet the response time guidelines.

Police Service

The City of Irvine Police Department (IPD) operates out of the main headquarters at 1 Civic Center Plaza. The City is divided into three separate geographic units, which are shown in Figure 3.14-2, *Irvine Police Department Geographic Units*, and listed in Table 3.14-2. The neighborhoods within each geographic unit are also shown on Table 3.14-2.

Table 3.14-2
Irvine Police Department Geographic Units

Unit	***Neighborhoods***
Portola	Windwood, College Park, West Park, Heritage/Groves, Walnut Square, The Ranch, Smoketree, Woodbridge, Colony, Willows/Greentree, Deerfield, El Camino Glen, Heritage Fields, Cypress Village, Laguna Altura and Los Olivos
Crossroads	Orange Tree, Northwood, North Park, North Park Square, Oak Creek, West Irvine, Old Town, Woodbury, Portola Springs, Orchard Hills, and Irvine Spectrum
University	Irvine Business Complex, Rancho San Joaquin, Turtle Rock, University Park, University Town Center, Quail Hill, Shady Canyon, and Turtle Ridge.

Source: City of Irvine 2011.

IPD Response Time Guidelines and Staffing Goals

IPD sets guidelines for responding to emergency and nonemergency calls. These goals area as follows:

- Emergency calls: response within 6 minutes, 85 percent of the time
- "Crimes in progress": response within 10 minutes, 85 percent of the time
- "Less serious crimes occurring now": response within 20 minutes, 20 percent of the time
- "Routine calls for service": response within 60 minutes, 85 percent of the time

In addition, as listed in the City's General Plan, IPD has a staffing goal of 1.14 police officers per 1,000 residents.

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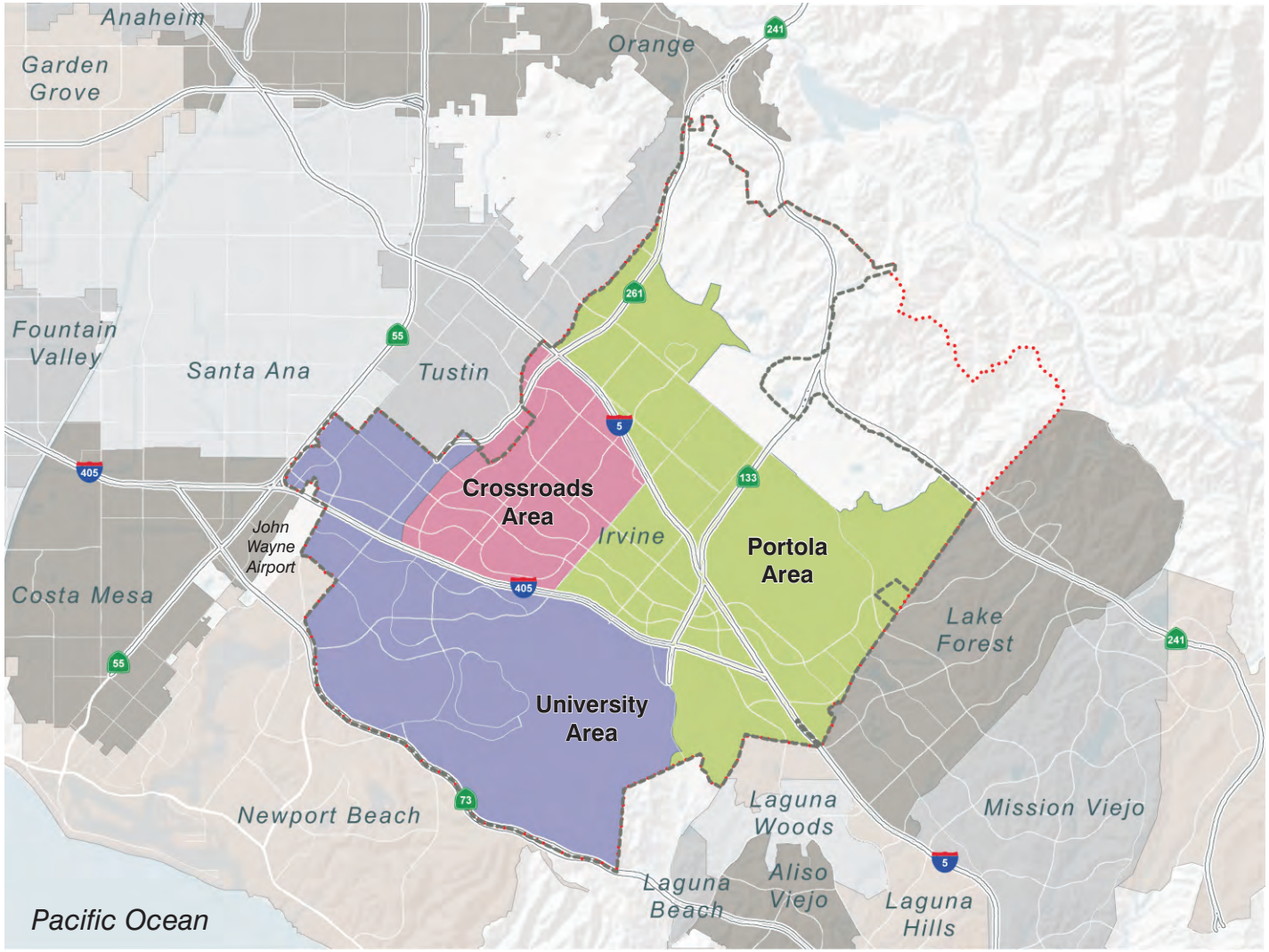
Irvine Police Department Geographic Units



LEGEND

- City of Irvine Boundary
- City of Irvine Sphere of Influence

0 3
Scale (Miles)

Source: SCAG 2007; SCAG 2008; City of Irvine 2011

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School Services

The City of Irvine is within the attendance boundaries of four school districts: Irvine Unified School District (IUSD), Tustin Unified School District (TUSD), Saddleback Valley Unified School District (SVUSD), and Santa Ana Unified School District (SAUSD). The jurisdictional boundaries of these four school districts are shown in Figure 3.14-3, *School Districts in Irvine*.

Park Services

Section 2.16, *Recreation*, provides details on the park and recreation facilities in the City of Irvine. As with recreational land uses, parks can be overused when population levels begin to increase, causing deterioration of park space.

Quimby Act

In 1975, the State enacted the Quimby Act (Government Code Section 66477). The Quimby Act authorizes only cities and/or counties to require the dedication of parkland and/or fees. Special districts must work with cities and/or counties to receive parkland and/or in-lieu fees. The fees must be paid and land conveyed directly to the appropriate city and/or county agency. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities. Additionally, The Quimby Act requires that the fees/improvements be used only for the purpose of rehabilitating existing park or recreational facilities to serve the subdivision.

The legislation established a maximum parkland dedication standard of 5 acres per 1,000 population for a new subdivision development, unless the amount of existing neighborhood and community parkland exceeds that limit.

City of Irvine Park Requirements

The City of Irvine's park requirements as established in the Municipal Code Section 5-5-1004 (Park Dedication). The Municipal Code implements State Legislation (California Government Code Section 66477 – Quimby Act). For every 5 required acres per 1,000 people, 2 must be used as community parks and 3 must be used as neighborhood parks. In addition, the City collects park dedication fees when residential building permits are issued in subdivisions.

The City's Municipal Code Section 5-5-1004 (c) and (d) authorizes the Planning Commission upon the recommendation of the Community Services Commission to determine distribution of public/private neighborhood parks and/or fees

City of Irvine Park Restrictions

The City of Irvine has slightly amended the Quimby Act and has incorporated it into its municipal code (Title 5, Division 5, Chapter 10, Section 5-5-1004). For every 5 required acres per 1,000 people, 2 must be used as community parks and 3 must be used as neighborhood parks. In addition, the City collects park dedication fees when residential building permits are issued in subdivisions.

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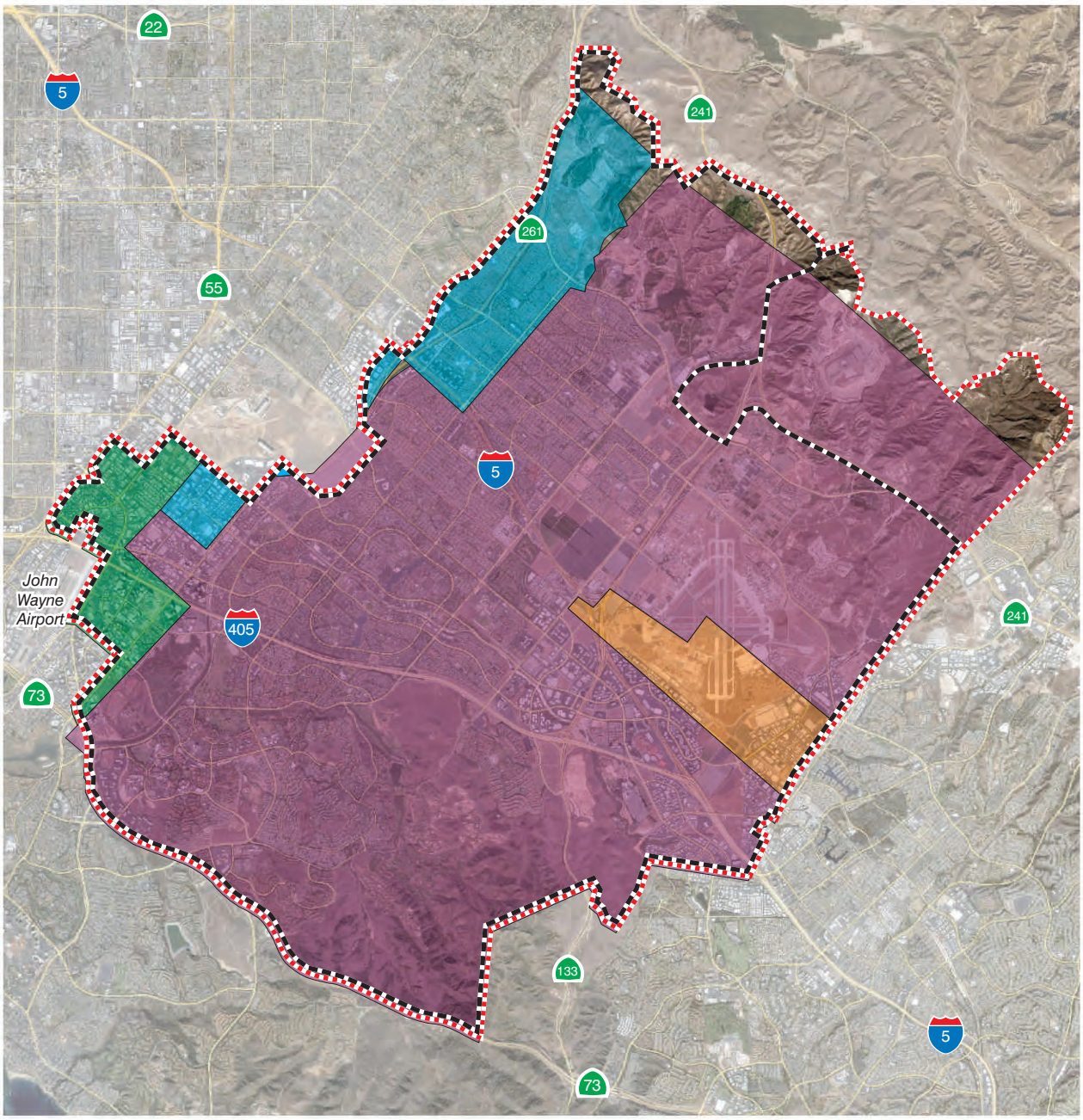
School District Boundaries



LEGEND

- City of Irvine Sphere of Influence
- Irvine Unified School District
- Tustin Unified School District
- Santa Ana Unified School District
- Saddleback Valley Unified School District
- City of Irvine Boundary

0 3
Scale (Miles)

Source: Google Earth Pro 2011

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Other Public Services

Other public services that are addressed under CEQA are typically libraries. When population is increased, the City's library system may become overused, requiring a need for additional library space. The construction of new library space, as for any other pubic service, creates environmental impacts. Libraries in the City of Irvine include:

- Heritage Park Regional Library, 14361 Yale Avenue
- University Park Library, 4512 Sandburg Way
- Katie Wheeler Library, 13109 Old Myford Road

Library Performance Standards

Both the City and the County have library performance standards:

- City of Irvine: 0.5 square foot of library space and 2.5 volumes per capita
- Orange County Public Library System: 0.2 square foot of library space and 1.5 volumes per capita

In 2005, the City established an ad hoc Library Task Force, and in October 2006 designated a standing Library Services Advisory Committee. A Library Needs Assessment Study to evaluate the state of library services and identify options for enhanced library services within the City was completed in October 2006. The study determined that new facilities are needed, especially in light of anticipated population growth. 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.

3.14.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for public services. A project would normally have a significant effect on the environment if the project meets the following conditions.

Would the project result in substantial adverse physical impacts associated with the provision 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 any of the public services:

a. Fire protection?
b. Police protection?
c. Schools?
d. Parks?
e. Other public facilities?

3.14.2 Determining Significance

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The environmental analyst should look at the questions provided in this flow chart.

PUBLIC SERVICES

Additional questions that pertain specifically to public services are provided for each step of the "General Approach for Environmental Analysis" flow chart.

Step 1: Determine the Existing Conditions

The existing conditions should determine the location of the nearest public service facilities to the proposed project and whether the project would be within the service areas of these facilities. It should also include a discussion of the characteristics of the current service, based on the following questions:

For fire and police service:

- How many emergency calls are responded to on a yearly basis?
- What is the current response time to emergency and nonemergency calls?
- Are OCFA and IPD currently meeting their performance standards for response times?
- For police service, is the current staffing goal (1.14 police officers per 1,000 residents) being met?
- For fire service, are the current workloads less than 3500 response per year?

For schools:

- What are the enrollment figures (current academic year) for public schools that would serve the project? (This information can be gathered from the district directly or through the school Accountability Reports, usually found on a district's website.)

- What are the current capacities of each of the public schools that would serve the proposed project?

For parks:

- What park and/or recreational facilities would serve the project site?

- What is the current ratio of park space per capita?

For libraries:

- What is the current percentage of library space and number of volumes per capita? Are libraries meeting their performance standard?

Step 2: Project Impacts

For public services, impacts are based on how an increase in population, whether it is permanent (residents) or temporary (workers), would affect the public service providers' ability to meet their demands. If an increase in population is substantial enough to require the construction of new facilities or adding new service units to meet growing needs, impacts would be potentially significant. The impact discussion should take into account all short-term and long-term, physical and operational, and project-related and cumulative impacts. The degree of impact is based on:

- The determination of whether the project would cause the service provider's performance standard to be exceeded; and

- Feedback and/or discussions with a representative of the service provider.

For EIRs, service questionnaires are typically mailed to service providers to gauge the potential impacts caused by the proposed project. These should be mailed after the IS has been released, at the start of EIR analysis.

For each category, the following questions should be asked:

- For fire, would the proposed project cause OCFA to exceed their response time guidelines and/or workload capacity?
- For police, would the proposed project cause IPD to exceed their response time guidelines and/or their police officer staffing goal?
- For schools, would the proposed project cause the local schools to exceed their existing capacities?
- For libraries, would the proposed project increase the population enough to cause libraries to not meet their performance standard (0.5 square foot of library space or 2.5 volumes per capita)?

Estimating Future Student Population

Once a project description has been established and the proposed project's housing quantity and type is known, the future student population can be estimated. This is then used to determine whether a project would cause an increase in student population and whether new facilities would be needed. Each district in Irvine has different student generation rates which are continually updated.

Step 3: Apply Plans, Policies, and Programs

The City of Irvine lists the PPPs in each topical section of an EIR, usually preceding or at the start of the impact analysis section. The PPPs include local, state, and federal regulations, including the City's Standard Conditions of Approval. PPPs may reduce the level of impact significance and would preclude the need for additional analysis. This must be substantiated in the environmental analysis.

Fire

All projects must comply with the OCFA codes, ordinances, and standard conditions.

Police

Proposed projects must meet the City of Irvine standard conditions for emergency access, construction site security, and the uniform security code.

School Services

Senate Bill 50

Senate Bill 50 (SB 50), which passed in 1998, provided a comprehensive school facilities financing and reform program and enabled a bond issue to be placed on the ballot. The provisions of SB 50 allowed the state to offer funding to school districts in the form of grants to acquire school sites, construct new school facilities, and modernize existing school facilities. SB 50 also established a process for determining the amount of fees developers may be charged to mitigate the impact of development on school facilities. Under this reform, a school district could charge fees above the statutory cap only under specified

conditions, and then only up to the amount of funds that the district would be eligible to receive from the state. According to Government Code Section 65995, the development fees authorized by SB 50 are deemed to be "full and complete school facilities mitigation."

Library Services

There are no PPPs that apply specifically to library services and the City of Irvine does not have a citywide library impact fee at the time this manual was prepared.

Step 4: Determine Impact Significance

Once it has been determined that a project impact exceeds the significance criteria and existing PPPs are not able to reduce the significance, these impacts are potentially significant. In some cases, an impact may not be significant if it is consistent with the general plan, the City's vision for the area, or other existing plans or guidelines for the project site. Significance conclusions must be substantiated in the analysis.

Step 5: Formulate Mitigation

For public services, mitigation measures are usually based on the input that is provided in the service provider's responses to service questionnaires or communications with the provider. They vary from project to project. For school services, the fees paid through SB 50 are considered full and complete school facility mitigation (Government Code Section 65995).

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

3.15 TRANSPORTATION AND TRAFFIC

Project-related traffic and transportation impacts are one of the most commonly identified environmental impacts.. Traffic congestion, for example, delays the movement of people and goods, and is the source of over half the air pollution in California. The environmental review process is a key tool in understanding the source of traffic and transportation issues and identifying ways to reduce their impacts on the local and regional circulation system and the environment.

Project-related traffic operations and safety impacts are addressed in this section. Other environmental impacts associated with project-related traffic and transportation infrastructure improvements (e.g., air quality, greenhouse gas emissions, noise) are addressed in the applicable sections of this City of Irvine CEQA Guidelines manual that pertain to such issues.

Existing Conditions

The City of Irvine is comprised of five different types of systems of transportation and circulation: air, roadways, rail, public transit, and trails.

Air System

The air system is comprised of general aviation and commercial flights from John Wayne Airport (JWA). Most of the air transportation needs or Orange County are met by JWA. The flight schedules of local airlines are regulated by the county to minimize air and noise pollution impacts on businesses and residents.

Roadway System

The City's arterial roadway system is shown in Figures B-1, Master Plan of Arterial Highways, and B-2, Operational Characteristics, of the City's General Plan Circulation Element. Figure B-1 illustrates the arterial highway designation for roadways in the City and county, which are outlined below and described in detail in City's General Plan Circulation Element.

- Freeway
- Transportation Corridor
- Expressway
- Major Highway
- Primary Highway
- Secondary Highway
- Commuter Highway

Figure B-2 designates the operational characteristics of roadways in the City. The functional operational classifications are outlined below and described in detail in City's General Plan Circulation Element.

- Freeway
- Transportation Corridor
- Expressway
- Thruway
- Parkway

- Collector

The City of Irvine is served by a circulation system that includes regional and local facilities, including: Interstates 5 (I-5) and 405 (I-405); State Route 241 (SR-241), also referred to as the Foothill Transportation Corridor; State Route 261 (SR-261) and State Route 133 (SR-133), both part of the Eastern Transportation Corridor; and various local roadways and arterials.

Rail System

The City of Irvine is currently served by rail transit at the Irvine Station off Barranca Parkway. The Tustin Metrolink Station, located on Edinger Avenue in the City of Tustin also provides connections to the City of Irvine. There are several Metrolink trains per day serving both stations, and the Irvine Station is also served by Amtrak. In 2005, the Orange County Transportation Authority's (OCTA) board of directors approved the Metrolink Service Expansion Program (MSEP) to provide more frequent train service between Fullerton and Laguna Niguel/Mission Viejo (OCTA 2011). Increased weekday service under the MSEP was launched in summer 2011 and improves services at both the Irvine and Tustin Metrolink Stations.

Public Transit System

The public transportation system is designed to serve regional and local travel needs. Interstate bus systems operate primarily along I-5 and I-405, with most having no stops in the City of Irvine. OCTA provides bus service to major destinations within the City and surrounding communities.

The public transit system is comprised of four hierarchical transit corridors as depicted in Figure B-3, Public Transit, of City's General Plan Circulation Element. The transit corridors are outlined below and described in detail in City's General Plan Circulation Element.

- Regional Transit Corridors
- Regional Advanced Transit Corridors
- Intercity Public Transit Corridor
- Local Feeder Transit Corridor
- Arterials

Additionally, The *i*Shuttle is a clean fuel, rubber tire shuttle bus that operates adjacent to and within the study area. The service began operation in the Irvine the Irvine Business Complex (IBC) on March 31, 2008 and in the Irvine Spectrum on October 10, 2011. The *i*Shuttle network consists of four routes:

- Route A: Operates along Von Karman Avenue, connecting to Tustin Station and John Wayne Airport. The service operates weekdays from 5:30 a.m. to 9:00 p.m. and 1:30 p.m. to 7:30 p.m. The bus frequency is tied to the train schedules, but is roughly 10 to 30 minutes.

- Route B: Connects Tustin Station to major employment and residential developments on Jamboree Road and Michelson Drive. The service operates weekdays from 5:30 a.m. to 9:00 a.m. and 1:30 p.m. to 7:30 p.m. The bus frequency is tied to the train schedules, but is roughly 10 to 30 minutes.

- Route C: Connects Irvine Station to major employment centers along Barranca, Irvine Center Drive, and Sand Canyon. The service operates weekdays from 6:30 a.m. to 9:00 a.m. and 3:45 p.m. to 6:15 p.m. The bus frequency is tied to the train schedules, but is roughly 10 to 30 minutes.

- Route D: Connects Irvine Station to major employment centers, residential developments, and the Irvine Spectrum Center (every 15 minutes). The service operates weekday from 5:30 a.m. to 9:30 a.m. and 3:45 p.m. to 10:30 p.m. The bus frequency is tied to the train schedules, but is roughly 10 to 30 minutes during the peak and longer in the late evening.

Metrolink and OCTA Pass holders ride the shuttle free. Other commuters are charged one dollar fares. There is no weekend service for either of these routes.

Bicycle Trails

There is an extensive network of trails that connect to destinations within the City of Irvine, as shown in Figure B-4, Tails Network, of the City's General Plan Circulation Element. On-street bicycle lanes have been developed along the majority of designated arterial roadways, while off-street bike trails have been developed to connect the various areas of the City and also provide connections to trail systems beyond the City's limits. Within the City, there are approximately 54 miles of off-street bikeways and 301 miles of on-street bike lanes. The Orange County Commuter Bikeways Strategic Plan, the City of Irvine Bicycle Transportation Plan, and the City of Irvine Circulation Element all address bicycle networks in the City.

In addition to the designated trails shown in Figure B-4, the City has also developed a comprehensive system of curb-adjacent and parkway-separated sidewalks. The comprehensive system of trails and sidewalks provide recreational and commuter opportunities throughout the City.

3.15.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

According to Appendix G of the State CEQA Guidelines a project would normally have a significant effect on the environment if the project would:

- 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?[1]

- 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?

- 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?

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

[1] For traffic analysis purposes, the model and analysis do not factor in or discount traffic due to the use of transit and non-motorized travel.

- Result in inadequate emergency access?

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

3.15.2 Determining Significance

The following guidelines for determining significance are based on the Initial Study Checklist questions of Appendix G of the State CEQA Guidelines.

General Approach

The City of Irvine has adopted guidelines for evaluating traffic impacts. Appendix K of the City of Irvine CEQA Manual is the City's *Traffic Impact Analysis Guidelines*.

Step 1: Determine the Existing Conditions

The existing conditions section should include a discussion on the existing circulation network in the vicinity of the project site.

Step 2: Project Impacts

Screening criteria are available for traffic based on standards adopted by the City of Irvine. The following screening criteria provide assistance in responding to the City's initial study checklist questions and can help determine if further study is needed to determine whether a significant traffic impact could potentially occur. CEQA screening criteria are not intended as a bright-line threshold to indicate significant impacts; rather, they provide additional guidance to determine when impacts would not occur or are *de minimus* so that a detailed analysis is not necessary:

Screening Criteria

In general, a traffic study or limited scope traffic study is required for projects that produce 50 or more (1 to 49 for a limited traffic study) peak hour trips during the AM or PM peak period; or if the project exceeds the established trip budget or entitlement. For a full discussion of screening requirements, refer to the Traffic Impact Analysis Guidelines.

Significance Criteria

The methodology to calculate and determine traffic impacts is outlined in the City's *Traffic Impact Analysis Guidelines.*

Step 3: Apply Plans, Policies, and Programs

The City of Irvine lists the PPPs in each topical section of an EIR, usually preceding or at the start of the impact analysis section. The PPPs include local, state, and federal regulations, including the City's Standard Conditions of Approval. PPPs may reduce the level of impact significance and would preclude the need for additional analysis. This must be substantiated in the environmental analysis.

Step 4: Determine Impact Significance

Once it has been determined that a project impact exceeds the significance criteria and existing PPPs are not able to reduce the significance, these impacts are potentially significant. In some cases, an impact may not be significant if it is consistent with the general plan, the City's vision for the area, or other existing plans or guidelines for the project site. Significance conclusions must be substantiated in the analysis.

Step 5: Formulate Mitigation

For traffic, mitigation measures are usually based on the technical analysis. Appendix D lists sample mitigation measures for traffic impacts.

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

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3.16 RECREATION

Environmental impacts to recreation are measured as impacts to recreational parks and facilities. As population increases, demand is greater for recreational parks and facilities. Existing recreational areas are overused and begin to deteriorate if new facilities are not constructed. The construction of new facilities would impact the physical environment.

Recreational Facilities in Irvine

The City's Municipal Code Section 5-5-1004 (Park Dedication) implements the Quimby Act (Government Code Section 66477). In 1975, the State enacted the Quimby Act. The Quimby Act authorizes only cities and/or counties, as part of the State Subdivision Map Act, to require the dedication of parkland and/or fees. The fees must be paid and land conveyed directly to the appropriate city and/or county agency and not to a special district or Homeowners Association. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities. Additionally, The Quimby Act requires that the fees/improvements be used only for the purpose of rehabilitating existing neighborhood park or recreational facilities to serve the subdivision.

The City's Municipal Code Sections 5-5-1004 (c) and (d) authorizes the Planning Commission upon the recommendation of the Community Services Commission to determine distribution of public/private neighborhood parks and/or fees. Additionally, the Municipal Code requires that all parks must comply with the most current, applicable national and state codes, regulations and standards.

Provision of City parkland consistent with the Quimby Act requires that Irvine monitor the ratio of residents to parkland. Maintenance of this ratio not only ensures that the provision of park space keeps pace with demand caused by population growth, but also prevents the deterioration of existing facilities from overuse. Irvine establishes the required parkland space for subdivisions to be five acres per 1,000 residents, which is consistent with the Quimby Act. The implementation of a project can affect this ratio, and therefore, individual projects have the potential to increase use at park facilities and hasten their deterioration. For this reason, it is important that environmental analysis disclose a project's potential to create such impacts and identify any need for additional facilities.

The City of Irvine allocates park space per 1,000 residents as follows:

- Community parks: 2 acres
- Neighborhood parks: 3 acres

There are five types of parks in the City of Irvine:

- Regional Open Space
- Regional Parks
- Community Parks
- Public Neighborhood Parks
- Private Neighborhood Parks

Regional Parks

Mason Regional Park is operated by the County but is located within the City.

RECREATION

Community Parks and Facilities

Table 3.16-1 details information on the community parks and facilities available in Irvine.

Table 3.16-1
Existing Irvine Community Recreational Parks and Facilities

Name	*Location*	*Size*	*Amenities*
Alton Athletic Park	308 West Yale Loop	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	15 acres	2 restrooms, 1 drinking fountain, 1 open play area, 1 amphitheater, 1 volleyball court, 1 barbeque, group picnic area
Colonel Bill Barber Marine Corps Memorial Park	4 Civic Center Plaza	48 acres (including roller hockey rink)	Deanna Manning Stadium, 3 additional 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 barbeques, 6 group picnic shelters, 4 restrooms, 17 drinking fountains, electrical outlets
Deerfield Community Park	55 Deerwood West	10.1 acres	1 multiuse building, 1 restroom, 5 drinking fountains, 2 child play areas, 1 open play area, 1 concession stand, 4 lighted tennis courts, 2 lighted volleyball Courts, 2 racquetball courts, 1 disc golf course, 1 fitness par course, bicycle trail access, 4 barbecues, 1 outdoor sink, 1 group picnic area, 11 picnic tables, electrical outlets

Table 3.16-1
Existing Irvine Community Recreational Parks and Facilities

Name	*Location*	*Size*	*Amenities*
Harvard Athletic Park	14701 Harvard Avenue	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 barbeques, 1 group picnic area, 10 picnic tables
Heritage Park	14301 Yale Avenue	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, 2 concession stands, 3 lighted soccer fields, 12 lighted tennis courts, 3 lighted basketball courts, 1 volleyball court, 2 lighted racquetball courts, 2 lighted ball diamonds, 22 barbeques, 1 group picnic area, electrical outlets
Hicks Canyon Park	3864 Viewpark	16.7 acres	1 restroom, 3 drinking fountains, child play area, concession stand, 2 lighted soccer fields, 2 lighted ball diamonds, bicycle trail access, 4 barbeques, 2 group picnic areas, 6 picnic tables, electrical outlets
Las Lomas Community Park	10 Federation Way	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 basketball courts, 1 racquetball/handball court, 2 group picnic areas, 7 barbeques, 14 picnic tables

Table 3.16-1
Existing Irvine Community Recreational Parks and Facilities

Name	*Location*	*Size*	*Amenities*
Lower Peters Canyon Community Park	3901 Farwell	10.3 acres	1 restroom, 1 drinking fountain, 1 child play area, 1 lighted soccer field, 1 softball, 8 lighted tennis courts, 2 barbeques, 8 picnic tables, electrical outlets
Northwood Community Park	4531 Bryan	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 lighted racquetball courts, 1 ball diamond, bicycle trail access, 4 barbecues, 2 group picnic areas, 14 picnic tables, electrical outlets
Oak Creek Community Park	15616 Valley Oak	11.7 acres	1 restroom, 2 drinking fountains, 2 child play areas, 2 lighted soccer fields, 1 ball diamond, bicycle trail access, 8 barbeques, 8 picnic tables, electrical outlets
Quail Hill Community Park	35 Shady Canyon Drive	16.7 acres	1 restroom, 2 drinking fountains, 2 lighted basketball courts, 2 lighted baseball fields with soccer field overlay, 2 barbeques, 2 picnic tables, electrical outlets, future Wilderness Center
Rancho Senior Center	3 Ethel Coplen Way	2.1 acres	1 multiuse building, 1 restroom, 1 drinking fountain, 1 barbecue, electrical outlets
Turtle Rock Community Park	1 Sunnyhill	25.1	1 multiuse building, 2 restrooms, 5 drinking fountains, 2 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, 25 picnic tables, electrical outlets

Table 3.16-1
Existing Irvine Community Recreational Parks and Facilities

Name	Location	Size	Amenities
University Community Park	1 Beach Tree Lane	16.3 acres	1 multiuse building, 1 restroom, 3 drinking fountains, 2 child play areas, 1 open play area, 2 lighted soccer fields, 4 lighted tennis courts, 1 basketball court, 2 lighted volleyball courts, 1 disc golf course, 1 lighted ball diamond, 1 group picnic area, electrical outlet
Windrow Community Park	285 East Yale Loop	18.9 acres	Ryan Lemmon Stadium (lighted), baseball field #2 (lighted, with soccer overlay), 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
Woodbridge Community Park, Lakeview Senior Center, and Adult Day Health Center	20 Lake Road	22 acres	2 basketball courts, 1 volleyball, 1 multiuse building, 3 restrooms, 2 drinking fountains, 1 amphitheater/stage, 2 barbeques, and 4 picnic tables
Woodbury Community Park	130 Sanctuary	10.7 acres	1 soccer field (unlighted), 2 basketball courts, 2 ball diamonds (unlighted), 4 barbeques, 3 group picnic areas, 11 picnic tables, 1 multiuse building, 1 restroom, 2 drinking fountains, 2 child play areas, and 1 open play area
Orange County Great Park (OCGP)	Sand Canyon and Marine Way	1,300 acres	The vision plan for the OCGP includes 165+ acres of sports park and fields, Great Canyon trail system, Veterans Memorial, botanical gardens, cultural terrace, and a three-mile long wildlife corridor

Neighborhood Parks and Facilities

The public and neighborhood parks and recreational areas are typically open space with none or very few amenities. Table 3.16-2 lists neighborhood parks and recreational areas in the City, current as of 2012. For an up to date list of neighborhood parks, visit the City's website at: http://www.cityofirvine.org/cityhall/cs/commparks/nparks/default.asp

Table 3.16-2
Public Parks and Recreation Areas

- Alderwood Park (4 Northwood)
- Blue Gum Park (14 Aberdeen)
- Bommer Vista Point (340 Summit Park Dr.)
- Brywood Park (15 Westwood)
- Canyon Park (6 Canyon Park)
- Carrotwood Park (60 Bennington)
- Chaparral Park (19032 Turtle Rock Drive)
- Citrusglen Park (12170 Citrusglen)
- College Park (14471 Mayten)
- Comstock Park (5 Countryside Drive)
- Coralwood Park (12 Fremont)
- Creekview Park (300 E. Yale Loop)
- Dovecreek Park (3 Dovecreek)
- Flagstone Park (21 Flagstone Drive)
- Hoeptner Park (5331 Hoeptner)
- Homestead Park (8 Cliffwood)
- Knollcrest Park (2065 Knollcrest)
- Meadowood Park (4685 Meadowood)
- Orchard Park (1 Van Buren)
- Pepperwood Park (55 Columbus)
- Pinewood Park (11 Hudson)
- Plaza Park (610 Paseo Westpark)
- Presley Park (4732 Karen Ann Lane)
- Racquet Club Park (4030 Robon)
- Ranch Park (5161 Royale)
- San Carlo Park (15 San Carlo)
- San Leandro Park (12 Paseo Westpark)
- San Marco Park (1 San Marco)
- Sepulveda Vista Point (4 Federation Way)
- Settlers Park (35 Settlers Way)
- Silkwood Park (1 Mayflower)
- Sweet Shade (15 Sweet Shade)
- Stonegate Park (280 Honors)
- Sycamore Park (27 Lewis)
- Valencia Park (3081 Trevino Road)
- Valley Oak Park (16001 Valley Oak)
- Willows Park (4562 Ranchgrove)

3.16.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for determining recreation impacts. A project would normally have a significant effect on the environment if:

a. The project 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.

b. The project includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

3.16.2 Determining Significance

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The environmental analysis for recreation should take into account the questions provided in this flow chart. Additional questions that pertain specifically to recreation are provided for each step in this section.

Step 1: Determine the Existing Conditions

- Are any of the recreation or park facilities listed in Tables 3.16-1 or 3.16-2 on or near the project site?
- Where are the nearest recreational facilities to the project site and what are they?
- In what condition are the existing facilities that may be used by the proposed project?

Step 2: Project Impacts

A description of project characteristics and the project impact analysis should be based on the following questions. These questions can be used for both thresholds "a" and "b."

- Does the proposed project physically affect an existing recreational facility?

- Would the proposed land uses increase the local population in a way that would cause an increase in recreational facility use in the surrounding area?

- Would the proposed project involve the construction of new public or private recreational facilities?

Step 3: Apply Plans, Policies, and Programs

- Is the proposed project within one of the City's Open Space Implementation Action Program Districts (Section 8.2 of the City's Zoning Ordinance)?

- If the proposed project includes a public park, it is subject to Standard Conditions 1.12, 2.17, and 3.12.

- If the proposed project includes a private park, it is subject to Standard Condition 3.11.

- If the proposed project includes a private or public trail dedication, it is subject to Standard Conditions 2.15 and 2.16.

- Residential projects are subject to Standard Condition 2.18.

- As outlined in Title 5, Division 5, Chapter 10 of the City's Municipal Code, all subdivisions must:
    - Dedicate land as park and recreation space to serve the subdivision; or
    - Pay the in-lieu fees to the City for the construction of new or rehabilitation of existing parks or recreational facilities.

Step 4: Determine Impact Significance

Once it has been determined that a project impact exceeds the significance criteria and existing PPPs are not able to reduce the significance, these impacts are potentially significant. For recreation, impacts may be beneficial to the City if the proposed project includes the construction of a new facility or park that can alleviate overuse of existing facilities. However, the discussion should also determine whether the construction of new or expanded facilities would cause environmental impacts. Significance conclusions must be substantiated in the analysis.

Step 5: Formulate Mitigation

Generally, compliance with Irvine's PPPs, including payment of Quimby Act fees, results in less than significant recreational impacts. However, if impacts remain potentially significant after PPPs have been applied, any feasible mitigation measures to reduce or avoid potentially significant impacts must be included. Mitigation measures must be feasible to be enforced and implemented by the project applicant, lead agency, or another responsible agency. A nexus must be demonstrated between the project impact and the proposed mitigation measure.

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.

3.17 UTILITIES AND SERVICE SYSTEMS

Utility and service system providers are typically a combination of City, quasi-public agencies, and privately-owned companies and corporations. Following is a description of the various utility and service systems and providers that serve the City of Irvine.

Water

The Irvine Ranch Water District (IRWD) is the water purveyor for the City of Irvine. It is a multiservice jurisdictional agency that provides potable and nonpotable water supply and wastewater collection, treatment, and disposal services. IRWD prepares two planning documents to guide water supply decision making:

- **Water Resources Master Plan (WRMP)**, a comprehensive document compiling data and analyses that IRWD considers necessary for its planning needs (primary source for IRWD for water planning)
- **Urban Water Management Plan (UWMP)**, a document required by statute (California Water Code Section 10631, et seq.)

Table 3.17-1 provides characteristics of the potable and nonpotable water supplies in the City of Irvine.

Table 3.17-1
Potable and Nonpotable Water Supply

Source	*Comments*
Potable Water Supply	
Imported Water (35 percent of total supply)	• Purchased through the Metropolitan Water District of Orange County (MWDOC) from the Metropolitan Water District of Southern California (MWD) • All imported water goes through the MWD Diemer Filtration Plant
Groundwater (65 percent of total supply)	• Orange County Groundwater Basin • Local wells, including the Dyer Road Wellfield Project and IRWD's Deep Aquifer Treatment System
Nonpotable Water Supply	
Michelson Water Reclamation Plant in Irvine	• primary uses are agriculture and landscape irrigation but also used for industrial processes, toilet flushing, and front and backyard irrigation • IRWD meets roughly 25 percent of its service area's water demands with recycled water

Wastewater

City of Irvine

Wastewater in the City of Irvine travels through IRWD's collection system to the Michelson Water Reclamation Plant, where it is treated to tertiary standards through the reclamation process for use in landscaping and agricultural irrigation and other nonpotable water uses in the City. The entire City is in the jurisdictional area of the Santa Ana Regional Water Quality Control Board (SARWQCB).

Irvine Business Complex (IBC)

There is one portion of the City that is not part of the IRWD wastewater collection system. The IBC is in the Orange County Sanitation District (OCSD), tributary zone No. 7 (SD-7). Wastewater generated in the IBC is served by and currently flows to OCSD, and not to IRWD treatment facilities.

Stormwater

As mentioned under "Wastewater," the City is entirely within the SARWQCB jurisdictional area. As part of the State Water Resources Control Board (SWRQB), the SARWQCB is the regional board for the Santa Ana River watershed. The watershed and water quality issues are generally discussed in more detail in the Hydrology and Water Quality section of an EIR. However, the Utilities and Service Systems section of an EIR requires a discussion of stormwater drainage and whether the project would comply with water quality permits administered by the SARWQCB. Permits that pertain to stormwater include:

- Orange County Municipal Separate Storm Sewer Systems (MS4) Permit (issued by SARWQCB)
- General Industrial Activities Storm Water Permit (issued by SWRCB, administered by SARWQCB)
- General Construction Activity Storm Water Permit (issued by SWRCB, administered by SARWQCB)

Compliance with these permits is required when proposed development meets specified criteria.

- **MS4 Permit**: Any development that meets the criteria in Section XII.B.2 of the Orange County MS4 Permit must demonstrate compliance with the Permit and implement a Water Quality Management Plan (WQMP).

- **General Industrial Activity Permit**: This permit is generally not addressed in the CEQA document unless the proposed project is one of the industrial facilities covered by the permit (Attachment A of the General Industrial Activities Permit).

- **General Construction Permit**: Demonstration of compliance is required when the proposed project would disturb one acre or more. A project that disturbs less than one acre but is part of a phased development that disturbs more than one acre, compliance must also be demonstrated. A Stormwater Pollution Prevention Plan (SWPPP) must be implemented for construction activities.

The City of Irvine has adopted a Local Implementation Plan (LIP) that is consistent with the Drainage Area Management Plan (DAMP) for the SARWQCB.

Solid Waste

The Orange County Integrated Waste Management Department (IWMD) is the government agency that owns, regulates and operates three landfills to serve the solid waste disposal needs of the County.

The City of Irvine disposes of the majority of its sold wastes at the Frank R. Bowerman Landfill located in the City of Irvine.

The Orange County Board of Supervisors certified the Final EIR for the expansion of the landfill on August 15, 2006, and as a result, the closure date of this facility is 2053. IWMD is currently pursuing all required permits for the horizontal and vertical expansion of the landfill.

In addition to landfills, IWMD is also responsible for a variety of other solid waste facilities including

- operating six Transfer/Materials Recovery Facilities
- managing four Household Hazardous Waste Collection Centers
- administering waste collection and recycling operations in unincorporated areas of the County
- maintaining two closed landfills
- monitoring former disposal facilities

- The City, through Waste Management of Orange County, provides a comprehensive curbside recycling program for glass, household paper products, aluminum and other metals, and greenwaste.

Waste Diversion

In 1989, the State Legislature passed Assembly Bill 939 (AB 939), the Integrated Waste Management Act, which required cities and county to prepare, adopt, and submit a Source Reduction and Recycling Element (SRREs) to the County that characterizes waste disposal, source reduction, recycling, composting, solid waste capacity, education/public information, funding, special waste, and household hazardous waste in order to ensure sufficient solid waste disposal capacity. In addition, AB 939 mandated that by January 1, 2000, each city achieve a waste diversion foal of 50 percent accomplished through source reduction, recycling, and composting activities. In October 2011, the Legislature passed Assembly Bill 341 (AB 341), which increased the goal of diversion of waste from landfills from 50 percent to 75 percent by 2020. In addition, AB 341 requires mandatory commercial waste recycling.

Irvine Zero Waste Resolution (2007)

The City of Irvine Adopted a resolution to support Zero Waste principles on July 10, 2007. The City encourages many Zero Waste practices through residential curbside recycling, parks recycling (where City parks are equipped with special recycling receptacles for public use, recycling at City facilities, and the City's purchasing policy to buy recycled products when feasible. In addition, all City environmental programs public education materials include the State's adopted Slogan: "Zero Waste, You Make It Happen."

Irvine Construction & Demolition Debris Recycling Ordinance (2007)

The City of Irvine has adopted a Construction and Demolition (C&D) Debris Recycling and Reuse Ordinance (07-18). Under this ordinance, certain projects are required to recycle or reuse 75 percent of concrete and asphalt and 50 percent of the other debris generated. Covered projects include residential

development (one unit or more), non-residential development of at least one structure with a project area of 5,000 square feet or greater, and all projects involving non-residential demolition and/or renovation of 10,000 square feet or greater. Applicants for these projects are required to submit a Waste Management Plan to the Director of Public Works prior to beginning any construction, demolition, or renovation activities.

Utilities

Energy Systems

Electricity in the City is supplied by Southern California Edison (SCE) and natural gas is supplied by the Southern California Gas Company (SCG). To reduce energy use in the City, the City of Irvine has adopted an Energy Action Plan (2008). The City's Energy Action Plan goals include:

- Involve 100 Percent of Irvine Residents and Businesses in the Energy Plan
- Irvine Will Reduce Its Energy Use in Buildings Citywide 30 Percent by 2015 Compared to 2003 Levels
- Increase the Percentage of Renewable Energy Used by New Buildings Citywide
- Reduce GHG Emissions to:
    - 2000 Levels by 2010
    - 1990 Levels by 2020
    - 90 Percent Below 1990 Levels by 2050

3.17.1 Initial Study Checklist – Appendix G of the CEQA Guidelines

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for utilities and service systems. A project would normally have a significant effect on the environment if the project would:

a. Exceed waste water treatment requirements of the applicable Regional Water Quality Control Board.

b. Require or result in the construction of new water or waste water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed.

e. Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

g. Comply with federal, state, and local statutes and regulations related to solid waste.

3.17.2 Determining Significance

The following guidelines for determining significance are based on the Initial Study Checklist questions of Appendix G of the State CEQA Guidelines. The general approach for environmental analysis is provided, followed by a more detailed narrative for each of the checklist thresholds discussed in this section.

General Approach

The steps below are based on the "General Approach for Environmental Analysis" flow chart in Chapter 1 of this manual. The environmental analysis for utilities and service systems should look at the questions provided in this flow chart. Additional questions that pertain specifically to each subcategory of utilities and service systems (i.e., water, stormwater, wastewater, solid waste, and energy) are provided under each step of the "General Approach for Environmental Analysis" flow chart.

Step 1: Determine the Existing Conditions

Potable and Non-Potable Water

The existing water conditions must take into account where water comes from, how it gets there, how much water is available for use, and where it goes after it is used.

- What are the water supply sources and water collection, distribution, and treatment systems that would be used by the project?
- Is there infrastructure on or adjacent to the site? For potable and nonpotable water?
- Where does wastewater go once it leaves the site?

Solid Waste

The existing conditions section for waste should identify the primary landfills where municipal solid waste associated with the project would go.

Energy

The existing energy systems section should identify SCE and SCG as the purchased energy and natural gas providers, respectively.

Step 2: Project Impacts

In addition to the questions listed in the "General Approach to Environmental Analysis" in Chapter 1, the following questions can also be used to determine project impacts.

UTILITIES AND SERVICE SYSTEMS

Potable and Nonpotable Water (Thresholds b and d)

- What is the total water demand of the proposed project?
    - Water demands by land use are provided in the IRWD's WRMP.
- Would the project have a demand for nonpotable/recycled water?
- Do the proposed land uses demand a greater amount of water than the existing condition?
- Does the proposed project include any water efficiency design features, i.e., drip irrigation, low flow toilets, high efficiency water fixtures, etc.?

Wastewater (Thresholds a, b, and e)

- How much wastewater would be generated by the proposed project?
    - Wastewater generation factors are provided in Subarea Master Plan for the IBC (2008).
- Would the water go to the Michelson Water Reclamation Plant? If not, where would it go?
- Would the project's water exceed the existing daily treatment capacity of the wastewater treatment plant?
- Are there any project design features that would reduce or offset the wastewater generated by the project?

Stormwater

- Does the project alter the existing drainage patterns on the project site or increase the amount of stormwater runoff?
- Does the project involve development that would require demonstration of compliance with the Orange County MS4 permit, General Industrial Activity Permit, or General Construction Permit?
- Is an UWMP or SWPPP required?

Solid Waste

- How much waste would the proposed project generate (during project operation and construction)? Typically, the EIRs prepared for the City of Irvine use the solid waste generation rates from the California Department of Resources Recycling and Recovery (CalRecycle). These rates are found on the CalRecycle website and are based on land use type.
- Would the project generate a daily or yearly solid waste yield that, in combination with existing and future daily or yearly yields, would cause the capacity of local landfills to be exceeded?
- Would the project require the addition of a new solid waste collection route or other major improvements?

- Are there any construction or operational-related design measures, such as recycling programs and other waste diversion features, which would reduce the amount typically expected for the type of project proposed?

- Would the project support the City's State-mandated waste reduction goals and/or whether the project would meet specific waste diversion targets?

Energy

There is no specified threshold for other utility use (electricity and natural gas) but analysis may be provided in a CEQA document when it is expected that the proposed project may cause a change in electricity and natural gas use. Electricity and natural gas consumption is based on the rates provided in the Database for Energy Efficient Resources (DEER), are provided in Appendix J. These rates are general and more project-specific energy use rates may be obtained from utility providers.

Step 3: Apply Plans, Policies, and Programs

Water

IRWD

The project site may be in an area that is capable of receiving service form the IRWD's recycled water system. This area is shown in the Water Resource Master Plan, Sewer Master Plan, Natural Treatment System Master Plan, and addenda. If IRWD determines recycled water service is feasible, the project site must include both potable and nonpotable water supply systems. This is a local requirement enforced by IRWD.

The IRWD also requires fire flow analyses and connection fees to offset the fair share cost of a proposed project.

City of Irvine

Per Irvine City Council Ordinance No 09-12, residential and nonresidential development projects in the City of Irvine submitted after January 1, 2011, are subject to the 2010 California Green Building Standards Code. Plans are required to incorporate the City of Irvine Green Building Standard Notes, Residential, or Green Building Standard Notes, Non-residential.

State

A water supply assessment must be prepared for the project if it meets the criteria identified in SB 610 and adequate water supply must be verified for subdivisions that meet the criteria identified in SB 221. More information on these two bills is given in Appendix F, *Regulatory Information*.

Wastewater

See IRWD's requirements for determining recycled water use and connection fees.

Stormwater

The proposed project must be compliant with stormwater permits of the SARWQCB.

Solid Waste

- Is the proposed project subject to any of the City's code restrictions, policies, or plans, including:
    - Standard Condition 2.24 or Standard Condition 3.7, requiring compliance with Title 6, Division 7 of the City's Municipal Code?
    - The Construction and Demolition (C&D) Debris Recycling and Reuse Ordinance?
    - The Zero Waste Program?
- The State's requirement that 75% of landfill waste be diverted by 2020 (AB 341)?

Energy

New development (residential or nonresidential) in the City of Irvine is encouraged to implement building features that reduce energy use and meet the City's adopted Energy Plan.

- ***Renewable Energy.*** Chapter 3-23 of the Zoning Ordinance provides guidelines for installing solar energy equipment in a manner that is consistent with architectural and building code. The City's Energy Plan, adopted in 2008, has a policy goal for 40 percent of the energy used by new buildings Citywide will be derived from renewable sources by 2015 and 60 percent of the energy used by new buildings Citywide will be derived from renewable sources by 2020 (City of Irvine, 2008).

- ***Title 24.*** New residential, office, or commercial structures must also meet Title 24 of the California Building Code, regarding energy efficiency. This reduces overall building energy consumption.

- ***Net-Zero Buildings.*** The Long-Term Energy Efficiency Strategic Plan, adopted by the California Public Utilities Commission in 2008, provides a roadmap for commercial and residential buildings to achieve a net-zero building energy standard.

Step 4: Determine Impact Significance

Once it has been determined that a project impact exceeds the significance criteria and existing PPPs are not able to reduce the significance, these impacts are potentially significant. For most utilities categories, an impact is significant when the proposed project would require the construction of new facilities or acquiring of new equipment or resources that are not already funded through the City's Capital Improvements Program (CIP). For water supply, a project would have a significant impact if the proposed project would require more water than what is currently projected for the project site or available to IRWD.

Step 5: Formulate Mitigation

Mitigation measures to reduce potentially significant impacts are created after it has been substantiated that an impact is significant. Mitigation measures are meant to relate directly to the project impact and must be feasibly enforced and implemented by the project applicant, lead agency, or another responsible agency. A nexus must be demonstrated between the project impact and the proposed mitigation measure.

Step 6: Determine Significance After Mitigation

After the implementation of all mitigation and existing regulations, the resulting level of significance must be determined and stated. If there are no feasible mitigation measures, or mitigation measures would reduce but not avoid impacts, the remaining impacts are significant and unavoidable. If significant and unavoidable impacts remain, the City will be required to adopt a Statement of Overriding considerations if it chooses to approve a project despite such significant and unavoidable impacts.