INITIAL STUDY FOR:

THE PINNACLE AT SERRANO HIGHLANDS

DRAFT

prepared for:

CITY OF LAKE FOREST

Contact:
Ron Santos
Senior Planner

prepared by:

THE PLANNING CENTER | DC&E

Contact:
Konstanza Dobreva
Senior Planner

MARCH 2012

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25550 Commercentre Drive
Suite 100
Lake Forest, CA 92630
Tel: 949.461.3400 • Fax: 949. 949-461-3512
E-mail: rsantos@lakeforestca.gov

Contact:
Ron Santos
Senior Planner

prepared by:

THE PLANNING CENTER | DC&E

3 MacArthur Place, Suite 1100
Santa Ana, CA 92707
Tel: 714.966.9220 • Fax: 714.966.9221
E-mail: information@planningcenter.com
Website: www.planningcenter.com

Contact:
Konstanza Dobreva
Senior Planner

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MARCH 2012

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1. Introduction

Madison Investors, L.P. seeks City approval for Tentative Tract Map 15594 and Site Development Permit 2008-11 for Pinnacle at Serrano Highlands, a residential development consisting of 85 residential units within the City of Lake Forest, Orange County, California. The project site, part of the Serrano Highlands Planned Community, is generally ungraded and is currently undeveloped except for the northerly terminus of Peachwood, an arterial street.

The City of Lake Forest, as lead agency for the Pinnacle at Serrano Highlands (proposed project), is responsible for preparing environmental documentation in accordance with the California Environmental Quality Act (CEQA) as amended, to determine if approval of the discretionary actions requested and subsequent development could have a significant impact on the environment. This Initial Study will provide the City of Lake Forest with information to document potential impacts of the proposed project.

The proposed project was Site 6 of seven sites analyzed in the Lake Forest Opportunities Study Area (OSA) Program Environmental Impact Report (PEIR), which was certified in July 2008 (SCH No. 2004071039). The adoption of the OSA and associated PEIR changed the site's General Plan designation from Open Space to Low Density Residential and its zoning to Medium Density Residential. A development agreement was also executed for the site. Although there are differences between the project site and Site 6 as defined in the OSA PEIR, the environmental analysis in that document is relevant to the proposed project. Environmental analysis based on the OSA PEIR has been incorporated into this Initial Study where environmental effects of the proposed project were within the scope of, and adequately analyzed in, the OSA PEIR pursuant to applicable legal standards.

1.1 PROJECT LOCATION

The City of Lake Forest is surrounded by the City of Irvine to the west; Whiting Ranch Wilderness Park and an unincorporated area of Orange County to the north; the City of Mission Viejo to the east; and the Cities of Laguna Hills and Laguna Woods to the south. Terrain in the City ranges from the Saddleback Valley in the southern part of the City, to low hills in the north that lead up to the foothills of the Santa Ana Mountains north of the City. Much of the City has a gentle southwest slope, with elevations ranging from approximately 300 feet above mean sea level (amsl) at the southwestern corner of the City to approximately 1,500 feet amsl at the northern end of the City. Much of the City is developed with residential uses; commercial uses are concentrated near Interstate 5 (I-5) at the southern end of the City, State Route 241 (Toll Road) in the northern part of the City, and along three major southwest-northeast arterial roadways: Bake Parkway, Lake Forest Drive, and El Toro Road.

The proposed project is a 24.6-acre residential development in the central portion of the City of Lake Forest. The project site is bounded by open space and the Pacific Vista Business Center office park on the north, an undeveloped property owned by the Irvine Ranch Water District (IRWD) approved for residential development on the east, the Willow Glen Condominiums on the south, and Tamarisk City Park on the west. The project site is traversed by a 75-foot-wide easement, which will remain, with rights granted to IRWD, El Toro Water District, and the Municipal Water District of Orange County. Figure 1, *Regional Location*, and Figure 2, *Local Vicinity Map*, show the location of the project site in the contexts of Orange County and Lake Forest, respectively. An aerial photograph of the project site and its surroundings is shown in Figure 3. Access to the project is provided via Peachwood to the south.

1.2 ENVIRONMENTAL SETTING

1.2.1 Project Background

In 1999, MCAS El Toro closed and efforts to construct a new County airport came to a close. Consequently, a number of undeveloped properties located in close proximity to the former MCAS El Toro were no longer limited to non-residential uses. The City established an 800-acre study area that comprised these properties and undertook a land use study to analyze proposed and anticipated land use changes within the study area. This study area was referred to as the Opportunities Study Area (OSA) and encompassed seven properties, including the Pinnacle at Serrano Highlands site. In 2006, a PEIR was prepared to analyze the anticipated land use changes within the 800-acre study area. This PEIR identified that the OSA project would have significant impacts to the environment in the areas of Aesthetics, Agriculture, Air Quality, Water Quality, Population, and Housing, and Greenhouse Gases. Portions of the PEIR were recirculated in 2008 to analyze a new alternative and to add an analysis of Global Climate Change. The Pinnacle at Serrano Highlands was Site 6 of seven sites analyzed in the OSA PEIR. The site was identified as an 18-acre site; however the site is now 24.6 acres. The OSA PEIR did not address the 6.6 acres of open space along the northern property boundary because they were not owned by the applicant and were not developable due to an easement. The 6.6 acres of open space are now owned by the applicant, but will remain undeveloped as open space within a fuel modification zone. The land use changes for the proposed project were evaluated as part of the PEIR. In June 2008, the City certified the PEIR in connection with the amendment of its General Plan for the OSA.

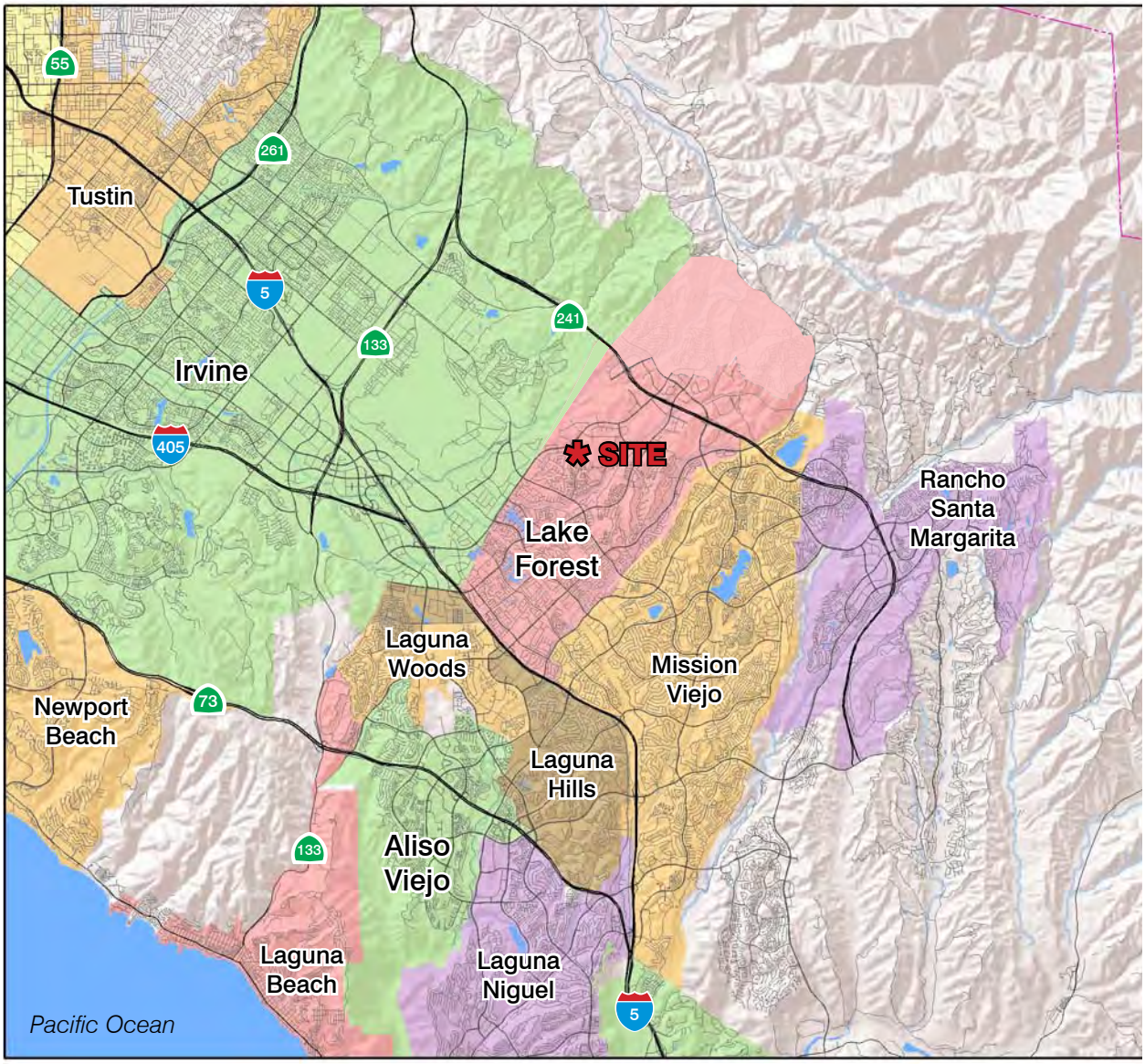
1.2.2 Existing Land Use

The project site is undeveloped and largely ungraded, except for a small graded portion of the property between Tamarisk Park and the terminating segment of Peachwood. The remainder of the site is vacant open space, featuring only dirt trails and access roads that lead from adjacent properties to the utility easement that traverses the site from the northwest to the southeast. Vegetation includes coastal sage scrub, trees, shrubs, and weedy groundcover. See Figures 4a and 4b, *Site Photographs*.

1.2.3 Surrounding Land Use

The project site is immediately adjacent to open space and the Pacific Vista Business Center office park to the north, an undeveloped property owned by the IRWD approved for residential development to the east, the Willow Glen Condominiums to the south, and Tamarisk Park to the west. In general, areas to the east and south consist of residential uses of a low-density, suburban character interspersed with narrow, linear, undeveloped open spaces. Residential areas consist of both attached townhomes and single-family detached homes and are designated for low and low-medium density residential uses in the General Plan. Areas to the west and north of the proposed project site primarily consist of light industrial uses and office parks and are designated for light industrial uses. The IRWD property to the east is currently undeveloped, but is designated for medium density residential uses. The City approved an application for the Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 which would allow for the development of residential, park and recreation uses, a Civic Center, and existing and proposed IRWD public facilities. The Baker Water Treatment Plant was approved in 2011 by IRWD for the site.

Regional Location



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Vicinity Map

Site Boundary

City Boundary

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Aerial Photograph

Site Boundary

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Scale (Feet)

Source: Google Earth Pro 2011

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Site Photographs

View of existing Peachwood looking south.

View of Site looking north toward future Linear Park.

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Site Photographs

View of Site looking southeast toward future Linear Park.

View of water district access road off the north property line.

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1.3 PROJECT DESCRIPTION

1.3.1 Proposed Land Use

The proposed Tentative Tract Map and a Site Development Permit have been submitted to the City of Lake Forest to subdivide 24.6 gross acres of undeveloped land into 85 numbered lots for single-family residential use, one numbered lot for private park purposes, 22 lettered lots designated for open space or common access driveways, and 3 lettered lots for private streets and sidewalks. A Tentative Tract Map is included as Figure 5.

The Pinnacle at Serrano Highlands is envisioned to include 85 single-family homes, 2 pocket parks, a 1.5-acre linear park following the existing utility easement, and an open space buffer along the site's northern boundary. The proposed design for the project provides for land uses with the following features:

Residential

- 85 detached, for-sale homes on approximately 9.7 acres
- Lots from 4,008 square feet to 7,675 square feet, with an average lot size of 4,929 square feet.
- Minimum 15' x 50' private rear yards
- Three plan types for homes ranging in size from 4 beds/3 baths (3,198 square feet) to 4-5 beds/3.5 baths (3,797 square feet)

Open Space

- Approximately 14.8 total acres of open space to be maintained by a new homeowners association (HOA), including:
    - A landscaped 1.5-acre linear park featuring an 8-foot-wide walkway
    - Two landscaped "pocket parks"
- Slope landscaping with fuel modification on perimeter areas of the site, including a 170-foot buffer between the proposed residential development and adjacent parcels to the north

1.3.2 Project Implementation

Grading

Implementation of the conceptual grading plan would require approximately 210,000 cubic yards of cut and fill. See Figure 6, *Grading Concept Plan*. The grading would be accomplished in the first phase of the project. Earthwork would be balanced onsite, and stockpiling would not be required except temporarily during grading operations. It is proposed that all slopes would be stabilized upon completion of grading and installation of permanent landscaping. The first phase includes site grading; slope landscaping and fuel modification; Peachwood improvements; storm drain improvements; roadway improvements for proposed streets F, G, and H, followed by improvements to proposed streets A, B, C, D, and E.

Peachwood Vacation and Offsite Improvements

A portion of the existing street (Peachwood) is proposed to reconfigured into the design of the proposed residential development. Beginning with the intersection of Peachwood and Palmwood, the street and sidewalk would taper to the west away from the existing retaining wall. The City's public easement over a portion of the right-of-way segment of Peachwood (north of the intersection of Peachwood and Tamarisk) would be fully vacated and replaced with a local private residential street and portions of new residential lots. The reconfigured roadway south of Tamarisk would allow new landscaped areas to be added adjacent to Peachwood. It would also result in a reduction in lanes. Instead of two lanes traveling in both directions, southbound Peachwood would transition from one travel lane to two (with a left turn lane onto Palmwood), and northbound Peachwood would consist of one travel lane and one left turn lane onto Tamarisk. Sidewalks would be included in the Peachwood street section, adjusted to reflect the reconfigured roadway.

1.4 EXISTING ZONING AND GENERAL PLAN

The site's existing General Plan land use designation is Low Density Residential, which allows 2 to 7 dwelling units per net acre. The site's zoning is Medium Density Residential within the Serrano Highlands Planned Community designation. Both of these designations were changed recently upon adoption of the OSA General Plan Amendment (No. 2008-02) and associated Zone Change (No. 2008-06).

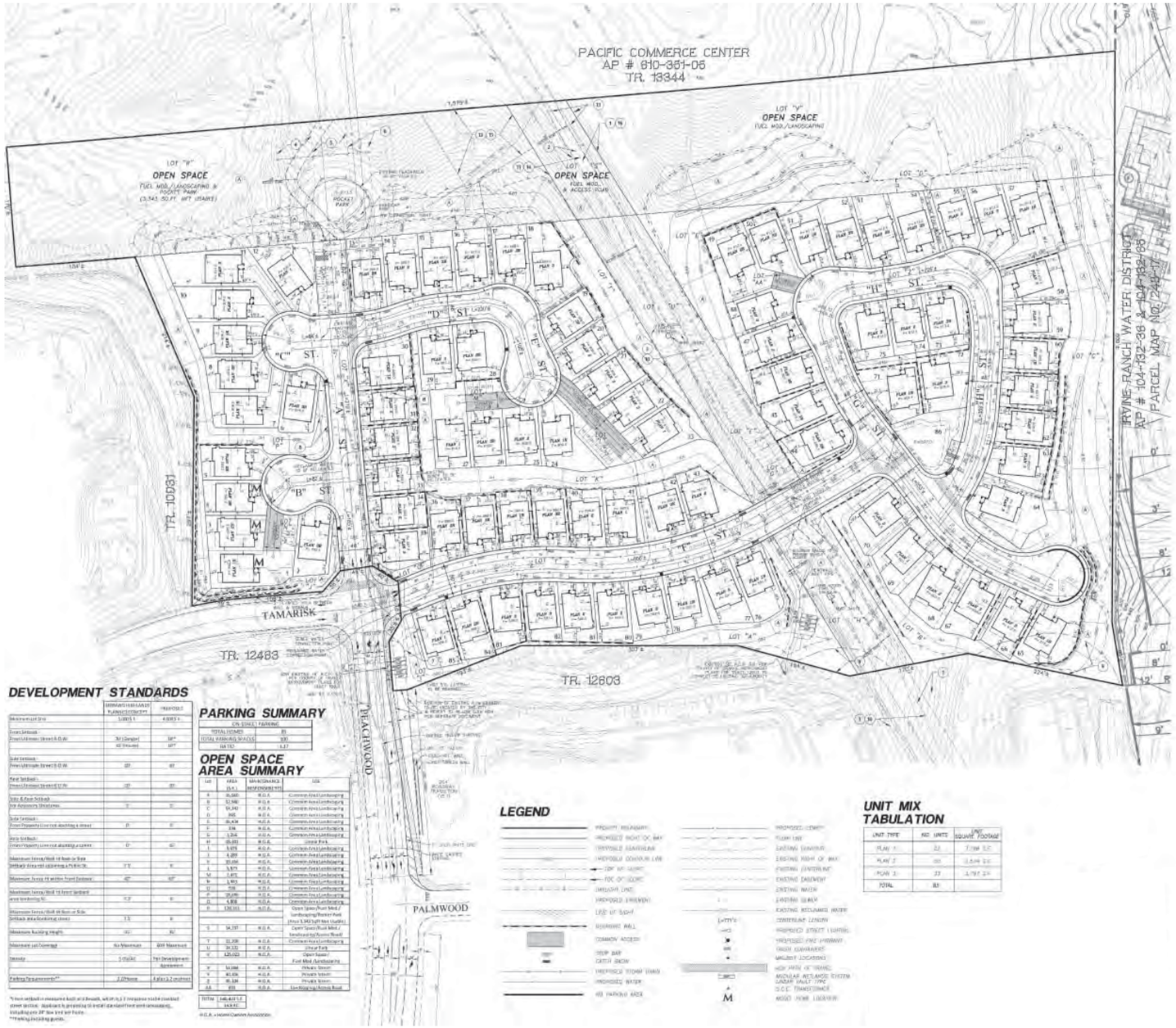
1.5 CITY ACTION REQUESTED

The applicant is seeking approvals for the implementation of the proposed project. The intent of this Initial Study is to enable the City of Lake Forest, other responsible agencies, and interested parties to evaluate the environmental impacts of the proposed project, thereby enabling them to make informed decisions with respect to the requested entitlements.

The proposed project would require the following entitlements from the City of Lake Forest:

- Site Development Permit No. 2008-11
- Tentative Tract Map No. 15594
- Use Permit for model home complex
- Planned Sign Program for model home complex
- General Plan Conformance for Peachwood right-of-way easement vacation

Tentative Tract Map



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Source: H&A 2011

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Grading Concept Plan

Site Boundary

Source: Hunsaker & Associates 2011

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2. Environmental Checklist

2.1 BACKGROUND

1. **Project Title:** The Pinnacle at Serrano Highlands

2. **Lead Agency Name and Address:**
City of Lake Forest
25550 Commercentre Drive, Suite 100
Lake Forest, CA 92630

3. **Contact Person and Phone Number:**
Ron Santos, Senior Planner
949) 461-3449

4. **Project Location:** North and east of the intersection of Peachwood and Tamarisk in the City of Lake Forest, CA

5. **Project Sponsor's Name and Address:**
Madison Investors, L.P.
25108 Marguerite Parkway
Suite A-132
Mission Viejo, CA 92691

6. **General Plan Designation:** General Plan land use designation is Low Density Residential, which allows 2 to 7 dwelling units per net acre.

7. **Zoning:** The site's zoning is Medium Density Residential within the Serrano Highlands Planned Community designation

8. **Description of Project** A Site Development Permit and Tentative Tract Map for development of a 24.6-acre vacant site into an 85-unit single family residential community. A portion of the existing Peachwood roadway is proposed to be vacated and reconfigured into the design of the proposed residential development.

9. **Surrounding Land Uses and Setting** (Briefly describe the project's surroundings):
The project site is immediately adjacent to open space and the Pacific Vista Business Center office park to the north, an undeveloped property owned by IRWD and planned for residential development to the east, the Willow Glen Condominiums to the south, and Tamarisk Park to the west.

10. **Other Public Agencies Whose Approval Is Required**
Orange County Flood Control District
U.S. Army Corps of Engineers
Santa Ana Regional Water Quality Control Board
Irvine Ranch Water District
California Department of Fish and Game
Orange County Fire Authority
U.S. Fish and Wildlife Service
Municipal Water District of Orange County

2.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

NEW INFORMATION OF SUBSTANTIAL IMPORTANCE, WHICH WAS NOT KNOWN AND COULD NOT HAVE BEEN KNOWN WITH THE EXERCISE OF REASONABLE DILIGENCE AT THE TIME OF THE PREVIOUS EIR, SHOWS THAT THE PROJECT WILL HAVE ONE OR MORE SIGNIFICANT EFFECTS NOT DISCUSSED IN THE PREVIOUS EIR. The subject areas checked below were determined to be new significant environmental effects or to be previously identified effects that have a substantial increase in severity either due to a change in project, change in circumstances or new information of substantial importance, as indicated by the checklist and discussion on the following pages.

☐ Aesthetics	☐ Agricultural and Forest Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

2.3 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

☐ No substantial changes are proposed in the project and there are no substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous approved ND or MND or certified EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. Also, there is no "new information of substantial importance" as that term is used in CEQA Guidelines Section 15162(a)(3). Therefore, the previously adopted ND or MND or previously certified EIR adequately discusses the potential impacts of the project without modification.

☐ No substantial changes are proposed in the project and there are no substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous approved ND or MND or certified EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. Also, there is no "new information of substantial importance" as that term is used in CEQA Guidelines Section 15162(a)(3). Therefore, the previously adopted ND, MND or previously certified EIR adequately discusses the potential impacts of the project; however, minor changes require the preparation of an ADDENDUM.

☒ Substantial changes are proposed in the project or there are substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous ND, MND or EIR due to the involvement of significant new environmental effects or a substantial increase in the severity of previously identified significant effects. Or, there is "new information of substantial importance," as that term is used in CEQA Guidelines Section 15162(a)(3). However all new potentially significant environmental effects or substantial increases in the severity of previously identified significant effects are clearly reduced to below a level of significance through the incorporation of mitigation measures agreed to by the project applicant. Therefore, a SUBSEQUENT MND is required.

☐ Substantial changes are proposed in the project or there are substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous

environmental document due to the involvement of significant new environmental effects or a substantial increase in the severity of previously identified significant effects. Or, there is "new information of substantial importance," as that term is used in CEQA Guidelines Section 15162(a)(3). However, only minor changes or additions or changes would be necessary to make the previous EIR adequate for the project in the changed situation. Therefore, a SUPPLEMENTAL EIR is required.

☐ Substantial changes are proposed in the project or there are substantial changes in the circumstances under which the project will be undertaken that will require major revisions to the previous environmental document due to the involvement of significant new environmental effects or a substantial increase in the severity of previously identified significant effects. Or, there is "new information of substantial importance," as that term is used in CEQA Guidelines Section 15162(a)(3) such as one or more significant effects not discussed in the previous EIR. Therefore, a SUBSEQUENT EIR is required.

RS ANDS	03-19-12
Signature	*Date*
RON SANDS	CITY OF LAKE FOREST
Printed Name	*For*

2.4 EVALUATION OF ENVIRONMENTAL IMPACTS

In accordance with CEQA (Public Resources Code Section 21000 - 21177), this Initial Study has been prepared to analyze the proposed project by the identification of any potentially significant impacts upon the environment that would result from construction and implementation of the project. In accordance with Section 15063 of the CEQA Guidelines, this Initial Study is a preliminary analysis prepared by the Lead Agency, the City of Lake Forest, in consultation with other jurisdictional agencies, to determine whether a Negative Declaration or EIR would be required for the proposed Pinnacle at Serrano Highlands project.

2.4.1 CEQA Document Tiering

The Public Resources Code and the CEQA Guidelines discuss the use of "tiering" environmental impact reports by lead agencies. Public Resources Code Section 21068.5 defines "tiering" as:

> "The coverage of general matters and environmental effects in an environmental impact report prepared for a policy, plan, program or ordinance followed by narrower or site specific environmental impact reports which incorporate by reference the discussion in any prior environmental impact report and which concentrate on the environmental effects which: (a) are capable of being mitigated, or (b) were not analyzed as significant effects on the environment in the prior environmental impact report."

Tiering is a method to streamline EIR preparation by allowing a Lead Agency to focus on the issues that are ripe for decision and exclude from consideration issues already decided or not yet ready for decisions (CEQA Guidelines Sections 15152 and 15385). According to CEQA Guidelines Section 15152 (a), "tiering" is defined as:

> "Tiering refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project."

According to CEQA Guidelines Section 15385: "Tiering is appropriate when the sequence of EIRs is (a) from a general plan, policy, or program EIR to a program, plan, or policy EIR of a lesser scope or to a site-specific EIR . . . ."

The concept of tiering anticipates a multi-tiered approach to preparing EIRs. The first-tier EIR covers general issues in a broader program-oriented analysis, including important program resource and mitigation commitments required to be implemented at the project-level. Subsequent tiers incorporate by reference the general discussions from the broader document, concentrating on the issues specific to the proposed action being evaluated (CEQA Guidelines Section 15152).

2.4.2 CEQA Requirements

Section 21166 of CEQA and Section 15162 of the CEQA Guidelines provide guidance with respect to when a subsequent or supplement to a prior certified EIR is required for a later project. The presumption is that "When an environmental impact report has been prepared for a project pursuant to this division, no subsequent or supplemental environmental impact report shall be required by the lead agency or by any responsible agency, unless one or more of the following events occurs:

(a) Substantial changes are proposed in the project which will require major revisions of the environmental impact report.

(b) Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the environmental impact report.

(c) New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available and shows that the project will have one or more significant effects not discussed in the previous environmental impact report.

The City undertook analysis of the proposed project and evaluated it against the standards set forth in 21166 and 15162 and determined pursuant to Section 15162(a)(3) that a subsequent MND should be prepared because substantial changes are proposed in the project or there is "new information of substantial importance," as that term is used in CEQA Guidelines Section 15162(a)(3). However all new potentially significant environmental effects or substantial increases in the severity of previously identified significant effects are clearly reduced to below a level of significance through the incorporation of project level mitigation measures agreed to by the project applicant. Accordingly, a Subsequent MND was prepared. The basis for these findings is listed in Section 2, *Environmental Checklist*, and explained in Section 3, *Environmental Analysis*.

2.4.3 Scope of Subsequent Analysis

This Subsequent MND has been prepared to evaluate the changes to the proposed Pinnacle at Serrano Highlands. The original 85-unit project was analyzed as Site 6 of the OSA PEIR, certified in July 2008. Site 6 was identified as an 18-acre site; however, the project is now 24.6 acres. The OSA PEIR did not address the 6.6 acres of open space along the northern property boundary because they were not owned by the applicant and were not developable due to an easement. The 6.6 acres of open space are now owned by the applicant and have been included in 24.6-acre site and will remain undeveloped as open space within a fuel modification zone. The “scope” of the review for the project is to review its impacts based on a comparison between existing conditions and post-project conditions. This Subsequent MND also examines the project in light of any changes in circumstances, or new information and whether they result in new significant impacts not previously analyzed in the prior certified EIR, or substantially increase the severity of impacts previously analyzed in the prior certified EIR.

2.4.4 Incorporation by Reference

This Initial Study incorporates by reference all or portions of the OSA PEIR and the technical documents that relate to the proposed project or provide additional information concerning the environmental setting of the proposed project. The information disclosed in this Initial Study is based on the following technical studies and/or planning documents:

- *City of Lake Forest General Plan 2010*

  The City of Lake Forest General Plan, dated June 21, 1994 and amended on July 1, 2010, serves as a policy guide for determining the appropriate physical development and character of the City of Lake Forest (City). The General Plan is founded upon the community’s vision for the City and expresses the community’s long-term goals. Implementation of the General Plan would ensure that future development projects are consistent with the community’s goals and that adequate urban services are available to meet the needs of new development.

The General Plan contains goals, policies, and plans which are intended to guide land use and development decisions. The General Plan consists of a Land Use Policy Map and the following six elements or chapters, which together fulfill the State requirements for a General Plan:

- Land Use;
- Housing;
- Circulation;
- Recreation and Resources;
- Safety and Noise; and
- Public Facilities/Growth Management.

Several supporting documents were produced during the development of the General Plan, including the Lake Forest Master Environmental Assessment and the General Plan Master Environmental Impact Report. These documents provide substantial background information for the General Plan. The General Plan and supporting documentation were used throughout this Initial Study as sources of baseline and background data.

- *City of Lake Forest Zoning Ordinance*

  The City Zoning Ordinance (Title 9 of the City's Municipal Code) and Planned Community texts, which implement the policies articulated in the General Plan, are the primary regulatory documents used to ensure land use compatibility. Both contain standards for development, such as minimum lot sizes, building setback and maximum height limitations, parking and landscaping requirements, and other standards designed to promote compatibility. The project site is within the Serrano Highlands Planned Community. The planned community provides a community design that has an orderly development and protects sensitive and natural resources. It is designed to act as an extension of the goals, policies, and guidelines of the General Plan.

- *City of Lake Forest Noise Ordinance*

  The Lake Forest Noise Ordinance (Chapter 11.16 of the Lake Forest Municipal Code) regulates unnecessary, excessive and annoying sounds, including noise associated with construction and property maintenance. Section 11.16.020 of the Lake Forest Municipal Code identifies interior and exterior noise limits that apply to all residential property within the City.

- *City of Lake Forest Retaining Wall Design Guidelines*

  The City of Lake Forest Retaining Wall Design Guidelines were adopted on June 15, 2010. The Guidelines were prepared, at the direction of the City Council, in order to assist the development community, City staff, and the Planning Commission with the review and implementation of development projects that include retaining walls. Specifically, the Guidelines are intended to encourage design that minimizes potential visual impacts, achieves compatibility with surrounding property, and incorporates quality building materials and integrated landscaping.

- *OSA PEIR 2008 (and certifying resolutions and findings)*

  The primary purpose of the City of Lake Forest Opportunities Study (Opportunities Study) was to amend the City's General Plan and Zoning Code (General Plan Amendment 2008-02 and Zone

Changes 2008-01 to 2008-05) for seven properties previously zoned for industrial and commercial uses to facilitate the potential development of residential and commercial uses. The proposed project is identified as Site 6 of the OSA. These properties were encumbered by the El Toro MCAS noise contours, as well as lying within the "crash zone" (APZ 2) for El Toro MCAS, which limited potential uses on those sites to only nonresidential uses. These noise contours and crash zone encumbrances are no longer necessary, as the El Toro MCAS is no longer used for air station or airport uses (nor is this facility planned for future air station or airport uses).

The OSA PEIR addresses the following environmental effects of the Opportunities Study (which includes the project site):

- Aesthetics and Visual Resources;
- Agricultural Resources;
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Geology/Soils and Mineral Resources;
- Greenhouse Gas Emissions;
- Hazards and Hazardous Materials;
- Hydrology/Water Quality;
- Land Use/Planning;
- Noise;
- Population/Housing;
- Public Services;
- Recreation;
- Transportation/Traffic; and
- Utilities/Service Systems.

The OSA PEIR addresses the issues referenced above and identifies potentially significant environmental impacts, including site-specific and cumulative effects of the project in accordance with the provisions set forth in the CEQA and the CEQA Guidelines. In addition, the OSA PEIR recommends feasible mitigation measures, where possible, that would reduce or eliminate adverse environmental effects of the Lake Forest Opportunities Study.

- *Addenda to OSA PEIR*

  The City of Lake Forest has processed two addenda to the OSA PEIR. An Addendum to the OSA PEIR was prepared and approved in July 2010 for a General Plan Amendment, Zone Change, and Development Agreement to redesignate the Shea/Baker Ranch project site from Business Park to Residential, Mixed-Use, and Open Space uses. An Addendum for Whisler Ridge was approved by the City Council on October 5, 2010 for a Tentative Tract Map to subdivide 12 acres into 68 single-family lots with an open space area at the western edge of the site.

- *City of Lake Forest CEQA Significance Thresholds Guide, dated November 20, 2001(revised March 2009)*

  The City of Lake Forest CEQA Significance Thresholds Guide was prepared for the review of projects, and in the preparation of environmental documents pursuant to CEQA. CEQA requires the analysis of discretionary projects to disclose their potential effects on the environment. The City of Lake Forest CEQA Significance Thresholds Guide is a tool that compiles information that

is useful in the preparation of environmental documents, and improves the level of consistency, predictability, and objectivity of the City's environmental documents. The Guide provides assistance in evaluating the significance of project impacts for six key topical issues in the City of Lake Forest: traffic, noise, air quality, land use, aesthetics, and water resources. For each topical issue the following information is provided: background information; discussion of relevant standards, planning guidelines, policies etc.; thresholds of significance; and potential mitigation.

- Technical studies, personal communications and web sites listed in Section 4, *Reference.*

The foregoing documents are available for review at the Development Services Department, located at 25550 Commercentre Drive, Suite 100, Lake Forest, CA 92630.

2.4.5 Terminology Used in the Checklist

This Initial Study reviews the proposed project's potential environmental impacts against the previously approved Site 6 project described in the certified OSA PEIR to determine if impacts were adequately analyzed and mitigated. The following terminology is used in determining the project-related impacts:

1) A finding of "No New Impact/No Impact" means that the potential impact was fully analyzed and/or mitigated in the prior CEQA document and no new or different impacts will result from the proposed activity. A brief explanation is required for all answers except "No New Impact/No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No New Impact/No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No New Impact/No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) A finding of "New Mitigation is Required" means that the project has a new potentially significant impact on the environment or a substantially more severe impact than analyzed in the previously approved or certified CEQA document and that new mitigation is required to address the impact.

3) A finding of "New Potentially Significant Impact" means that the project may have a new potentially significant impact on the environment or a substantially more severe impact than analyzed in the previously approved or certified CEQA document that cannot be mitigated to below a level of significance or be avoided.

4) A finding of "Reduced Impact" means that a previously infeasible mitigation measure is now available, or a previously infeasible alternative is now available that will reduce a significant impact identified in the previously prepared environmental document.

5) All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

6) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analyses Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis. Describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the proposed action.

c) Infeasible Mitigation Measures. Since the previous EIR was certified or previous ND or MND was adopted, discuss any mitigation measures or alternatives previously found infeasible that would in fact be feasible or that are considerably different from those previously analyzed and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternatives.

d) Changes in Circumstances. Since the previous EIR was certified or previous ND or MND was adopted, discuss any changes in the project, changes in circumstances under which the project is undertaken and/or "new information of substantial importance" that cause a change in conclusion regarding one or more effects discussed in the original document.

7) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

8) Supporting Information Sources. A source list should be attached and other sources used or individuals contacted should be cited in the discussion.

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
I. AESTHETICS. Would the project:				
a) Substantially damage scenic resources, including scenic vistas from public parks and views from designated scenic highways or arterial roadways?			X	
b) Create a new source of substantial night lighting that would result in "sky glow" (i.e. illumination of the night sky in urban areas) or "spill light" (i.e. light that falls outside of the area intended to be lighted) onto adjacent sensitive land uses?			X	
c) Create a new source of substantial glare which would adversely affect daytime visibility and/or views in the area?			X	
d) Substantially degrade the existing visual character or quality of the site and its surroundings where: • The project exceeds the allowed height or bulk regulations, or exceeds the prevailing height and bulk of existing structures. • The project is proposed to have an architectural style or to use building materials that will be in vivid contrast to an adjacent development where that development had been constructed adhering to a common architectural style or theme; • The project is located on a visually prominent site and, due to its height, bulk, architecture or signage, will be in vivid contrast to the surrounding development or environment degrading the visual unity of the area. • A project would include unscreened outdoor uses or materials. • A project would result in the introduction of an architectural feature or building mass that conflicts with the character of the surrounding development.			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
II. AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) 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?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			X	
d) Result in the loss of forest land or conversion of forest land to non-forest use?			X	
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			X	
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?			X	
IV. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on		X		

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
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?		X		
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?			X	
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?			X	
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?			X	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	
d) Disturb any human remains, including those interred outside of formal cemeteries?			X	
VI. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
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?			X	
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?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?			X	
VII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
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			X	

	Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
	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?			X	
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?			X	
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
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?			X	
IX. HYDROLOGY AND WATER QUALITY. Would the project:					
a)	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?			X	
b)	Create or contribute runoff water which would exceed the capacity o existing or planned stormwater drainage systems.			X	
c)	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?			X	
d)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			X	
e)	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?			X	
f)	Cause inundation by seiche, tsunami, or mudflow?			X	
g)	Deposit sediment and debris materials within existing channels obstructing flows?			X	
h)	Exceed the capacity of a channel and cause overflow during design storm conditions.			X	
i)	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			X	

	Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
	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)?				
j)	Adversely change the rate, direction, or flow of groundwater?			X	
k)	Have an impact on groundwater that is inconsistent with a groundwater management plan prepared by the water agencies with the responsibility for groundwater management.			X	
l)	Violate any water quality standards or waste discharge requirements?			X	
m)	Cause a significant alteration of receiving water quality during or following construction			X	
n)	Substantially degrade groundwater quality?			X	
o)	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.			X	
p)	Create or contribute runoff water which would generate provide substantial additional sources of polluted runoff?			X	
q)	Substantially degrade water quality by discharge which affects the beneficial uses (i.e. swimming, fishing, etc.) of the receiving or downstream waters?			X	
r)	Increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list.			X	
X. LAND USE AND PLANNING. Would the project:					
a)	Physically divide an established community?			X	
b)	Substantially conflict with existing on-site or adjacent land use due to project-related significant unavoidable indirect effects (e.g., noise, aesthetics, etc) that preclude use of the land as it was intended by the General Plan.			X	
c)	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?			X	
d)	Conflict with the Central and Coastal Natural Communities Conservation Program/Habitat Conservation Plan (NCCP/HCP) of which the City of Lake Forest is a participant.			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
XI. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?			X	
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?			X	
XII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of stationary noise levels in excess of standards established by the City of Lake Forest as specified by the exterior noise standards set forth in the Noise Control Chapter of the Lake Forest Municipal Code?			X	
b) Generate traffic that would cause a noise level increase of 3dB or more on a roadway segment adjacent to a noise sensitive land use, which include, but are not limited to residential (single-family, multi-family, mobile home), hotels, motels, nursing homes, hospitals, parks, playgrounds, and recreation areas, and schools?			X	
c) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
d) A substantial permanent increase in "future with project" ambient noise levels for sensitive land uses (identified in the City of Lake Forest General Plan Table 3-1 in Section 3.3, Interior and Exterior Noise Standards) in the project vicinity above levels existing without the project?			X	
e) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
f) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	
g) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			X	
XIII. POPULATION AND HOUSING. Would the project:				
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			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
roads or other infrastructure)?				
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			X	
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			X	
XIV. PUBLIC SERVICES. 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?			X	
b) Police protection?			X	
c) Schools?			X	
d) Parks?			X	
e) Other public facilities?			X	
XV. RECREATION.				
a) Would the project 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?			X	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	
XVI. TRANSPORTATION/TRAFFIC. Would the project:				
a) 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?			X	
b) 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?			X	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e) Result in inadequate emergency access?			X	
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.			X	
g) Cause the ICU (intersection capacity utilization) values at intersections, with the proposed project, to exceed the City of Lake Forest performance criteria as specified in Table C-3 of the General Plan Circulation Element?			X	
h) Include design features or uses that may cause traffic hazards such as sharp curves, tight turning radii from streets, limited roadway visibility, short merging lanes, uneven road grades, or any other conditions determined by the City traffic engineer to be a hazard?			X	
i) Provide less parking than required, applying the standards found in the City of Lake Forest Municipal Code?			X	
XVII. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
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?			X	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?			X	
e) Result in a determination by the wastewater 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?			X	

Issues	New Potentially Significant Impact	New Mitigation is Required	No New Impact/No Impact	Reduced Impact
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?			X	
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

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3. Environmental Analysis

Section 2 provided a checklist of potential environmental impacts. This Section 3 provides an evaluation of each potential impact by category and by the questions contained in the CEQA checklist, and identifies mitigation measures, if applicable.

3.1 AESTHETICS

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to aesthetics:

PPP AESTH-1 (*OSA PEIR MMRP Aesthetics Standard Condition*) Compliance with Municipal Code and applicable Planned Community text documents to ensure that height, bulk, architecture and/or signage will comply with code requirements.

PPP AESTH-2 (*OSA PEIR MMRP Aesthetics Landscaping Standard Condition LS1*) Prior to the issuance of a building permit, the applicant shall submit to the Director of Development Services for review and approval a precise landscape and irrigation construction plan prepared by a licensed landscape architect for the project consistent with the conceptual landscape plans approved by the Planning Commission.

PPP AESTH-3 (*OSA PEIR MMRP Aesthetics Landscaping Standard Condition LS2*) Prior to building permit final inspection for the project, the applicant shall have installed landscaping and irrigation in accordance with the approved plan. The applicant shall submit a landscape installation verification letter to the Director of Development Services from a licensed landscape architect indicating that the landscaping for the project was installed in accordance with the approved plan.

PPP AESTH-4 (*OSA PEIR MMRP Aesthetics Light and Glare Standard Condition of Approval LG1*) Prior to issuance of a grading permit, the applicant shall submit a photometric survey for the site. In addition, the applicant shall provide a note on the lighting plans that states no direct lighting spillage shall be permitted to shine on any other property. The proposed lighting standards shall be hooded or shielded to focus the light downward. A grading permit shall not be issued until the lighting has been reviewed and approved by the Director of Development Services.

PPP AESTH-5 (*OSA PEIR MMRP Aesthetics Mechanical Equipment Standard Conditions of Approval ME2*) Prior to issuance of a building permit, the applicant shall demonstrate that mechanical equipment placed on any roof such as, but not limited to, air conditioning and heating, shall be screened from view.

PPP AESTH-6 (*OSA PEIR MMRP Aesthetics Model Home Complex Standard Condition of Approval: MHC1*) Within 60 days after the termination of the use of the subject property as a model home/sales complex, the parking lot and temporary fencing shall be removed

or revised as necessary to comply with the current applicable zoning regulations. Within six months following the removal of the parking lot improvement and trailer, the lots upon which the parking lot and trailer were situated shall be either planted with grass or improved with dwellings.

a) Substantially damage scenic resources, including scenic vistas from public parks and views from designated scenic highways or arterial roadways?

No New Impact. The OSA PEIR analyzed the visual impacts of Site 6, an 85-unit development and found the impacts to be less than significant. The Pinnacle at Serrano Highlands is surrounded by existing residential development, vacant land planned for residential development, office parks, and a City park. The 24.6-acre project site is located in the gently sloping central portion of the City.

The overall topography of the site slopes to the southwest. The elevation is approximately 540 feet above Mean Sea Level in the northeastern portion of the site. There are no manmade features within the site except for an unpaved utility service road which traverses the site and below grade utility lines. A 75-foot wide, 1.5 acre linear park is proposed and runs the length of the site. This park is proposed over an existing-to-remain pipeline easement held by the Municipal Water District of Orange County for a water pipeline. It features a 16-foot-wide walkway/utility service road, but will be maintained in cleared condition, with no structures or trees.

Scenic resources are undisturbed, as are unique vistas, natural or undisturbed areas, or officially recognized areas. There are no scenic or historic resources onsite. The County of Orange and California Department of Transportation (Caltrans) designate roadways that provide scenic views as official scenic highways or corridors (Caltrans 1996). The County of Orange Master Plan of Scenic Highways designates Santiago Canyon Road and El Toro Road (between Santa Margarita Parkway and Live Oak Canyon Road) as scenic routes. These scenic routes, while within the City, are not located in close proximity to the site such that current views experienced from these roadways would be affected by any development that would occur on the project site. The proposed project is not located near a designated state scenic highway or adjacent to local freeways or roadways that are designated or eligible scenic roadway (Caltrans 2003). Although entirely undeveloped, a portion of the site is graded. There are no natural rock outcroppings onsite. Vegetation on site is low and scrubby and would not be considered a scenic resource.

Tamarisk Park is a public park located directly adjacent to the proposed project site to the west. Visitors of the park would have limited views of the rear of homes located along the site's western boundary because of the site's topography. The park is at a lower elevation than the project site and a pedestrian path into the park is located near the westerly project boundary. Figure 7, *View from Tamarisk Park 1 Year Growth*, provides a before and after view simulation of the proposed project after one year. Figure 8, *View from Tamarisk Park 5 Year Growth* is a view simulation depicting the project in 5 years with mature landscaping. Currently park visitors have views of the residential units south of the park's parking lot and of the units across the road. Views of the proposed project would be similar to views of existing residential units and would be minimized through use of landscaping planted along a slope proposed between the existing park and the proposed buildings pads. The overall development would not increase impacts to scenic vistas in comparison to the project analyzed in the OSA PEIR. The OSA PEIR found Site 6 impacts to scenic resources to be less than significant. Impacts were adequately addressed in the OSA PEIR and remain less than significant. The overall aesthetic impact of the modified project would be similar to the impact of the project approved by the OSA PEIR. Therefore, no new significant impacts damaging scenic resources would occur as a result of the proposed project.

View from Tamarisk Park 1-Year Growth

Existing View

Proposed View

Source: VisionScape Imagery 2012

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View from Tamarisk Park 5-Year Growth

Existing View

Proposed View

Source: VisionScape Imagery 2012

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b) Create a new source of substantial night lighting that would result in "sky glow" (i.e. illumination of the night sky in urban areas) or "spill light" (i.e. light that falls outside of the area intended to be lighted) onto adjacent sensitive land uses?

No New Impacts. There are two primary sources of light: light emanating from building interiors that pass through windows and light from exterior sources (e.g., street lighting, parking lot lighting, building illumination, security lighting, and landscape lighting). Depending upon the location of the light source and its proximity to adjacent light sensitive uses, light introduction can be a nuisance, affecting adjacent areas and diminishing the view of the clear night sky. Light spillage is typically defined as unwanted illumination from light fixtures on adjacent properties. Perceived glare is the unwanted and potentially objectionable result from looking directly into a light source of a luminary. Sensitive uses (e.g., residential uses) surrounding the project site could be impacted by the light and glare from development within the boundaries of project site.

The OSA PEIR determined that the overall project is expected to include typical street lighting at levels of 1 to 3 foot-candles. This level of lighting is unobtrusive and typically considered a less than significant impact. However, the City had an adopted threshold for outdoor illumination impacts at the time that it prepared the OSA PEIR. Specifically, the threshold considered outdoor illumination of more than 1 ¼ foot-candles to be significant. Thus, the OSA PEIR found that outdoor illumination from the OSA projects would be significant. MM 3.1-1 through MM 3.1-4 were incorporated to help reduce the impact. Mitigation measures 3.1-1 through 3.1-4 require projects developed pursuant to the OSA EIR to submit a lighting plan to the City of Lake Forest Development Services Department for review and approval; to position, aim, and shield outdoor lighting, including signage, so as to minimize spill light onto adjacent residential properties; and to comply with City of Lake Forest Municipal Code and applicable Planned Community guidelines. However, because the mitigation measures proposed would not reduce outdoor lighting to a level less than the City's stated threshold of significance of 1¼ foot-candles between dusk and dawn, this impact would be significant and unavoidable. Mitigation measures 3.1-1 through 3.1-4 are applicable to and are incorporated in the proposed project as AE MM-1 to AE MM-4 to reduce nighttime lighting impacts that would result from implementation of the new development.

The proposed project would introduce new light sources onto a currently undeveloped site. Night lighting impacts were identified as significant and unavoidable in the OSA PEIR. PPP AESTH-4 ensures that the applicant shall submit a photometric survey for the site and that lighting standards shall be hooded or shielded to focus the light downward. Further, OSA PEIR Mitigation Measure 3.1-4 requires that landscape illumination and exterior sign lighting shall follow the City's Municipal Code. Residential uses of identical density were contemplated by OSA PEIR Site 6. The project would not introduce new or substantially greater light sources when compared to the analysis for OSA PEIR Site 6. OSA PEIR mitigation measures would be implemented for the proposed project. Therefore, no new significant night lighting impacts are expected.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures (3.5-1 through 3.5-4) are taken directly from the OSA PEIR. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed project.

AE MM-1 (*OSA PEIR MMRP Mitigation Measure 3.1-1*) Prior to issuance of a **precise** grading permit for the project, the applicant shall submit a lighting plan to the Development Services

Department for review and approval. The plan shall specify the lighting type and placement to ensure that the effects of security lighting are limited as a means of minimizing night lighting and the associated impacts to aesthetics. Prior to completion of final plans and specifications, the City of Lake Forest shall review the plans and specifications to ensure that all light fixtures will use glare-control visors, arc tube suppression caps, and will use a photometric design that maintains 70 percent of the light intensity in the lower half of the light beam. Completion of this measure shall be monitored and enforced by the City of Lake Forest.

AE MM-2 (*OSA PEIR MMRP Mitigation Measure 3.1-2*) All lighting and advertising (including signage) shall be oriented in such a manner to reduce the amount of light shed onto adjacent residential development and incorporate "cut-off" shields as appropriate to minimize any increase in lighting at adjacent residential properties.

AE MM-3 (*OSA PEIR MMRP Mitigation Measure 3.1-3*) All interior floodlights, exterior parking lot, and other security lighting shall be directed away from adjacent uses and towards the specific location intended for illumination. State-of-the-art fixtures shall be used, and all lighting shall be shielded to minimize the production of glare and light spill onto both existing and proposed residential units. A lighting design plan shall be submitted to the City for approval ~~at the time of building permit~~ **prior to** issuance **of precise grading permits** ~~for each specific development project~~.

AE MM-4 (*OSA PEIR MMRP Mitigation Measure 3.1-4*) Landscape illumination and exterior sign lighting shall follow the City's Municipal Code and applicable Planned Community design guidelines and be accomplished with low-level unobtrusive fixtures.

c) Create a new source of substantial glare which would adversely affect daytime visibility and/or views in the area?

No New Impact. Glare could occur from building materials of the new structures including glass, concrete, stucco, wood, and other materials compliant with applicable City design guidelines and architectural standards. The anticipated building materials and land uses for The Pinnacle at Serrano Highlands project are typical of those found in the surrounding areas and are not expected to create unusual or isolated glare effects. Buildings would be constructed of materials such as stucco and wood that provide for minimal glare potential. The use of neon or glare-generating materials is not proposed. As a result, impacts related to glare would be less than significant. Glare impacts were identified as less than significant in the OSA PEIR. Therefore, the proposed project would not generate new glare impacts compared to the analysis in the certified OSA PEIR. There are no new impacts.

d) Substantially degrade the existing visual character or quality of the site and its surroundings where:

i) The project exceeds the allowed height or bulk regulations, or exceeds the prevailing height and bulk of existing structures.

ii) The project is proposed to have an architectural style or to use building materials that will be in vivid contrast to an adjacent development where that development had been constructed adhering to a common architectural style or theme;

iii) The project is located on a visually prominent site and, due to its height, bulk, architecture or signage, will be in vivid contrast to the surrounding development or environment degrading the visual unity of the area.

iv) A project would include unscreened outdoor uses or materials.

v) A project would result in the introduction of an architectural feature or building mass that conflicts with the character of the surrounding development.

No New Impact. The project's location and surrounding land uses are discussed in Section 3.1a above. Implementation of the proposed project would alter the existing visual character of the project site. Figure 9, *Peachwood View 1-Year Growth*, depicts (in a photo simulation) the intersection of Peachwood and Tamarisk before and 1 year after development of the proposed. Figure 10, *Peachwood View 5-Year Growth* is a depiction of the intersection with mature landscaping after 5 years.

The native and nonnative species of trees, shrubs, and grass located on the site would be removed and replaced with a 85-unit single family residential neighborhood with one linear park, two pocket parks, open space, and associated infrastructure (i.e., streets, utilities). The residential uses would be visible from area roadways. Views of natural vegetation, hillside topography and hillsides would be replaced with residences, parks and ornamental landscaping. The existing topography of the site would be altered.

Any retaining walls proposed would be buffered by landscaping provided along the slope area and would comply with Lake Forest's Retaining Wall Design Guidelines, approved by the City Council on June 15, 2010. The objective of the Guidelines is to ensure that proposed retaining walls are constructed in an aesthetically pleasing and high quality manner that fits within the character of the community.

The proposed residential uses would be visible from the adjacent existing residential developments and Tamarisk Park. However, the project proposes both onsite and offsite (the sidewalk along Peachwood) landscaping that would provide a visual buffer between the proposed development and the existing developments. See Figure 11, Conceptual Landscape Plan. The use of this extensive landscaping along the project site boundaries and within the interior of the site would soften the visual character of the proposed master-planned community. While the proposed architectural style of residential uses differs slightly from the surrounding multi-family developments, it would not be in vivid contrast or direct conflict with the overall character of the area. Lastly, with approval of the tentative tract map the proposed project would be consistent with the City of Lake Forest zoning requirements and development standards relative to the height and bulk of the project. PPP AESTH-1 ensures compliance with Municipal Code and applicable Planned Community text documents to ensure that height, bulk, architecture and signage will comply with code requirements. Therefore, the proposed project would not substantially degrade the existing visual character or quality of the project site and its surroundings.

Impacts to the visual character of the site and surrounding areas of development of the project site (Site No. 6) were found to be less than significant in the OSA PEIR. The project's site plan and grading plan were developed after the OSA PEIR was certified, and the project site has changed since certification of the OSA PEIR. The proposed project provides approximately 6.6 additional acres of open space, to be used for fuel modification, along the site's northern boundary. Because the number of units is the same and the additional acres would remain as open space, the project's visual overall impact is similar to the project analyzed in the certified OSA PEIR. The overall aesthetic impact of the modified project would be similar to the impact of the project approved by the OSA PEIR. Impacts would therefore remain less than significant and there would be no new significant impacts as a result of the proposed project.

3.2 AGRICULTURE AND FORESTY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) 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?

No Impact. There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the project site. Although the OSA PEIR identified 432 acres of Prime Farmland and Unique Farmland on two of the seven sites analyzed, those areas were not within Site 6 (the project site). Therefore, since there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance onsite, no analysis of impacts to farmland is needed and no impact would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. There is no zoning for agricultural use on the project site. The zoning designation on the project site is Serrano Highlands Planned Community – Medium Density Residential. Under Williamson Act contracts, private landowners voluntarily restrict their land to agricultural land and compatible open-space uses; in return, their land is taxed based on actual use, rather than potential market value. There are no Williamson Act contracts in effect on the project site, as stated in the OSA PEIR. No impact would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. There is no zoning for forest land, timberland, or timberland production onsite. The zoning designation onsite is Serrano Highlands Planned Community – Medium Density Residential. Although this is a new CEQA impact threshold not analyzed in the OSA PEIR, no impact would occur and no further analysis is necessary

Peachwood View 1-Year Growth

Existing View

Proposed View

Source: VisionScape Imagery 2012

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Peachwood View 5-Year Growth

Existing View

Proposed View

Source: VisionScape Imagery 2012

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Conceptual Landscape Plan

Source: TCLA Inc 2011

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d) Result in the loss of forest land or conversion of forest land to non-forest use?

No New Impact. This is a new CEQA impact threshold and it was not analyzed in the OSA PEIR. This CEQA threshold was not adopted at the time that the OSA PEIR was prepared and therefore was not incorporated into that analysis. Forest land is defined 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" (California Public Resources Code Section 12220[g]). Timberland is defined as "land…which 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" (California Public Resources Code Section 4526).

No forest or woodland was identified among six plant communities identified onsite during a survey of the site for sensitive plants (PCR 2010). None of the vegetation types identified on the project site in the OSA PEIR are native forest or woodland vegetation types. No new impact would occur and the project does not require any changes to the OSA PEIR related to forest land or timberlands. Thus, no further analysis is required.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No New Impact. Development of the project would not convert farmland or forest land. There is no forest land, mapped farmland, or agricultural production onsite or adjacent to the site. Based on the site location and its urban nature, development of the proposed residential and open space uses on the project site is not expected to result in conversion of mapped farmland to non-agricultural use, or in conversion of forest land to non-forest use. Thus, no new impact would occur and no further analysis is required.

3.3 AIR QUALITY

The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone (O_3), carbon monoxide (CO), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead (Pb).

Geographic areas are classified under the National and California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (SCAQMD), is designated as nonattainment for O_3, $PM_{2.5}$, PM_{10}[1] and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO_2 under the California AAQS (CARB 2011). The impact analysis considers impacts that would occur from construction and operational emissions of criteria pollutants and toxic air contaminants. This section includes a summary of the findings of the air quality analysis; for supporting data, model outputs and calculations, refer to Appendix A of this Initial Study.

[1] CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the national AAQS on March 25, 2010 because the SoCAB has not violated federal 24-hour PM_{10} standards during the period from 2004 to 2007. However, the USEPA has not yet approved this request.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to air quality:

PPP AIR-1 (*OSA PEIR MMRP Air Quality Standard Condition)* Project level review to determine construction and operation emissions. (*Satisfied with the Air Quality Analysis in this Initial Study*)

PPP AIR-2 (*OSA PEIR MMRP Air Quality Standard Condition*) Compliance with Title 24, Part 6, California's Energy Efficiency Standards for Residential and Nonresidential Buildings.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed project. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions.

AQ MM-1 (*OSA PEIR MMRP Mitigation Measure MM 3.3-1*) The developer shall require by contract specifications that all diesel-powered equipment used would be retrofitted with after-treatment products (e.g., engine catalysts) to the extent that it is readily available in the South Coast Air Basin. Contract specifications language shall be reviewed by the City prior to issuance of a grading permit.

AQ MM-2 ~~(*OSA PEIR Mitigation Measure MM 3.3-2*) The developer shall require by contract specifications that all heavy-duty diesel-powered equipment operating and refueling at a project site within the Project Area would use low-NOx diesel fuel to the extent that it is readily available and cost effective (up to 125 percent of the cost of California ARB diesel) in the South Coast Air Basin (this does not apply to diesel-powered trucks traveling to and from the project sites within the Project Area). Contract specification language shall be reviewed by the City prior to issuance of a grading permit~~. (*Mitigation Measure MM 3.3-2 is deleted because low-NOx diesel fuel is no longer manufactured and is not available for purchase.*)

AQ MM-3 (*OSA PEIR MMRP Mitigation Measure MM 3.3-3*) The developer shall require by contract specifications that alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) and low-emission diesel construction equipment would be utilized to the extent that the equipment is readily available and cost effective in the South Coast Air Basin. Contract specification language shall be reviewed by the City prior to issuance of a grading permit.

AQ MM-4 (*OSA PEIR Mitigation MMRP Measure MM 3.3-4*) The developer shall require by contract specifications that construction equipment engines will be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction. Contract specification language shall be reviewed by the City prior to issuance of a grading permit.

AQ MM-5 (*OSA PEIR MMRP Mitigation Measure MM 3.3-5*) The developer shall require by contract specifications that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than five

minutes. Contract specification language shall be reviewed by the City prior to issuance of a grading permit.

AQ MM-6 (*OSA PEIR MMRP Mitigation Measure MM 3.3-6*) The developer shall require by contract specifications that construction operations rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines to the extent feasible. Contract specification language shall be reviewed by the City prior to issuance of a grading permit.

AQ MM-7 (*OSA PEIR MMRP Mitigation Measure MM 3.3-7*)The developer shall implement dust control measures consistent with SCAQMD Rule 403— Fugitive Dust during the construction phases of new project development. Contract specification language shall be reviewed for inclusion of this language by the City prior to issuance of a grading permit. The following actions are currently recommended to implement Rule 403 and have been quantified by the SCAQMD as being able to reduce dust generation between 30 and 85 percent depending on the source of the dust generation:

- Apply water and/or approved nontoxic chemical soil stabilizers according to manufacturer's specification to all inactive construction areas (previously graded areas that have been inactive for 10 or more days)
- Replace ground cover in disturbed areas as quickly as possible
- Enclose, cover, water ~~twice~~ **three times** daily, or apply approved chemical soil binders to exposed piles with 5 percent or greater silt content
- Water trucks will be utilized on the site and shall be available to be used throughout the day during site grading to keep the soil damp enough to prevent dust being raised by the operations. Water active grading sites at least twice daily
- Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour over a 30-minute period
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code
- Sweep streets at the end of the day
- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip on a gravel surface to prevent dirt and dust from impacting the surrounding areas.
- Apply water three times daily or chemical soil stabilizers according to manufacturers' specifications to all unpaved parking or staging areas or unpaved road surfaces
- Post and enforce traffic speed limits of 15 miles per hour or less on all unpaved roads

Would the project:

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

No Impact. A project would conflict or obstruct with implementation of the air quality management plan (AQMP) if (1) it would exceed applicable thresholds, or result in an increase in the frequency or severity of existing air quality violations, or if it would (2) exceed the assumptions included in the AQMP. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals contained in the AQMP.

The proposed project was analyzed as Site 6 in the OSA PEIR. The OSA PEIR air quality impact analysis (January 2006) assumed a maximum of 85 dwelling units for the site. The proposed development plan would generate the same amount of air pollution as the project that has already been analyzed in the OSA PEIR. The AQMP is based upon patterns of existing and future development which are used to calculate the regional distribution of air pollution emissions. These inputs into regional air pollution modeling are derived from SCAG's Regional Comprehensive Plan (RCP). At the time the City certified the OSA PEIR for the Opportunities Study Area project, it was determined that the OSA project was not evaluated in the RCP. However, the City also found that the OSA project would generate fewer emissions than the prior General Plan land use designations and zoning, which were accounted for in the RCP. Although the OSA project was not consistent with the AQMP, it was environmentally superior to the other alternatives evaluated in the OSA PEIR. The OSA PEIR found impacts to be less than significant.

The proposed project is not a regionally significant project that would warrant Intergovernmental Review by the Southern California Association of Governments (Guidelines Section 15206). Therefore, the proposed project does not have the potential to substantially affect housing, employment, or population projections within the southern California region, which is the basis of the AQMP projections. Furthermore, emissions generated by construction and operation of the proposed project would be less than SCAQMD emissions thresholds, and would not be considered by SCAQMD to be a substantial source of air pollutant emissions. The project would not conflict with or obstruct implementation of the AQMP. There are no impacts.

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

New Mitigation Required. Construction and operation related air quality impacts were discussed and determined to be significant and unavoidable in the OSA PEIR. However, the OSA PEIR did not model construction impacts for individual development projects because construction details such as grading volumes were too speculative at the time. A screening level analysis for operational impacts was modeled based on each project's development intensity. Based on this screening level analysis, the PEIR identified that operational phase emissions for the entire OSA project would exceed SCAQMD thresholds for CO, volatile organic compounds (VOC), PM_{10}, and NOx. Although the PEIR identified that operational phase emissions would not exceed SCAQMD thresholds for Site 6, it stated that construction and operational emissions had to be evaluated at a project level to determine project level significance. Accordingly, the following analysis describes project-related impacts from short-term construction activities and long-term operation of the project.

Short-Term Air Quality Impacts

Construction activities would result in the generation of air pollutants including: exhaust emissions from powered construction equipment and motor vehicles; dust generated by grading, earthmoving, and other construction activities and; volatile organic compound (VOC) emissions from application of asphalt, paints, and coatings. Construction emissions estimates shown in Table 3.3-1 were calculated with the CalEEMod model, based on the construction schedule and preliminary construction equipment mix provided by the project applicant. As shown in the table, NO_x emissions from construction-related activities would exceed the SCAQMD regional significance threshold values.

Table 3.3-1
Unmitigated Maximum Daily Construction Emissions

	Pollutants (lb/day)					
Source[1]	***VOC***	***NO_X***	***CO***	***SO_2***	***PM_{10}***	***$PM_{2.5}$***
Site Preparation	<1	4	3	<1	1	<1
Grading	9	74	36	<1	10	6
Utilities and Underground Infrastructure	2	17	11	<1	1	1
Onsite Paving	4	21	14	<1	2	2
Offsite Road Improvements	3	21	14	<1	2	2
Building Construction	3	17	14	0	2	1
Architectural Coatings	12	2	2	0	<1	<1
Maximum Daily Emissions[3]	15	112	61	<1	12	8
SCAQMD Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	**Yes**	No	No	No	No

Source: CalEEMod Version 2011.1.1.
[1] Air quality modeling based on construction phasing and equipment list provided by project applicant. Where specific construction information was not available, CalEEMod defaults were used.
[2] Fugitive dust emissions assume application of Rule 403 and Mitigation Measure AQ MM-7, which includes watering exposed surfaces at least three times daily, and managing haul road dust, replacing ground cover quickly, and street sweeping.
[3] Maximum daily emission assumes overlap of (1) site preparation, grading, utilities and underground infrastructure; and (2) paving, road improvements, building construction and application of architectural coatings.

Mitigation measure MM-8 would require implementation of at least one of two construction equipment or construction phasing measures (see *Project-Specific Mitigation Measures* below). Table 3.3-2 shows that the maximum daily emissions would be below maximum daily emission thresholds and impacts would be less than significant with mitigation. There are no new impacts.

Table 3.3-2
Maximum Daily Construction Emissions with Mitigation

	Pollutants (lb/day)					
Source[1]	***VOC***	***NO_X***	***CO***	***SO_2***	***PM_{10}***	***$PM_{2.5}$***
Site Preparation	<1	4	3	<1	1	<1
Grading	9	74	36	<1	9	5
Utilities and Underground Infrastructure	<1	<1	1	<1	<1	<1
Onsite Paving	4	21	14	<1	2	2
Offsite Road Improvements	3	21	14	<1	2	2
Building Construction	3	16	13	0	1	1
Architectural Coatings	12	2	2	0	<1	<1

Maximum Daily Emissions[3]	15	91	47	<1	10	6
SCAQMD Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod Version 2011.1.1.

[1] Air quality modeling based on construction phasing and equipment list provided by project applicant. Where specific construction information was not available, CalEEMod defaults were used. Includes reductions associated with Mitigation Measure AQ MM-8 requiring use of Tier 3 construction equipment or restricts overlap of onsite road paving with grading and utility installation.

[2] Fugitive dust emissions assume application of Rule 403 and Mitigation Measure AQ MM-7, which includes watering exposed surfaces at least three times daily, and managing haul road dust, replacing ground cover quickly, and street sweeping.

[3] Maximum daily emission assumes overlap of (1) site preparation, grading, utilities and underground infrastructure; and (2) onsite road paving, offsite road improvements, building construction and application of architectural coatings. Results shown above are for the MM-8 with the restriction in overlap of onsite road paving with grading and utility installation. Results for MM-8 with Tier 3 equipment are included in Appendix A.

Long-Term Operation Impacts

Long-term air pollutant emissions generated by a residential project are typically associated with burning fossil fuels in cars and trucks (transportation sources), area sources (e.g., gas-burning fire places, consumer products, landscape equipment), and natural gas used for cooking and heating (energy use). Air pollutant emissions associated with project-related transportation, area, and energy-use are calculated using CalEEMod and are shown in Table 3.3-3. As shown, all emissions from operation-related activities are less than the SCAQMD regional significance thresholds. Therefore, long-term regional air quality impact would be less than significant and no mitigation measures are required. There are no new impacts.

Table 3.3-3
Maximum Daily Operational Regional Emissions
(in pounds per day)

	VOC	*NO_X*	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
Summer						
Area	14	<1	7	0	<1	<1
Energy	<1	1	<1	<1	<1	<1
Mobile	4	9	46	<1	10	1
Total	18	10	54	<1	10	1
SCAQMD Regional Threshold	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Winter						
Area	14	<1	7	0	<1	<1
Energy	<1	1	<1	<1	<1	<1
Mobile	5	9	45	<1	10	1
Total	19	10	52	<1	10	1
SCAQMD Regional Threshold	55	55	550	150	150	55
Significant?	No	No	No	No	No	No

Source: CalEEMod Version 2011.1.1.

[1] All fireplaces installed in residential units are assumed to be gas-burning in accordance with SCAQMD Rule 445, Wood Burning Devices.

Project-Specific Mitigation Measures

AQ MM-8 The construction contractor shall implement one of the following construction equipment or phasing measures. Prior to issuance of grading permits the City shall ensure that grading plans clearly show one of the following requirements will be implemented:

1) During construction, large off-road construction equipment with internal combustion engines having ratings of 300 horsepower or higher (i.e., dozers and scrapers) shall meet United States Environmental Protection Agency-Certified emissions standards for Tier 3 off-road emissions equipment. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. During construction the construction contractor shall maintain a list of all operating equipment in use on the project site for verification by the City Engineer. The construction equipment list shall state the makes, models, and numbers of construction equipment onsite.

2) The construction contractor shall be required to start the onsite road paving or offsite road improvements after project grading is completed. The grading, and utilities and underground construction phases shall not overlap with the offsite road improvements.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

No New Impact. The OSA PEIR found that cumulative impacts were significant and unavoidable. The OSA PEIR analysis assumed that individual development projects that generate construction or operational emissions that exceed the SCAQMD recommended daily thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the basin is in nonattainment. The SoCAB is designated as nonattainment for O_3, $PM_{2.5}$, PM_{10} and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO_2 under the California AAQS. The project would contribute to emissions of ozone precursors (VOC and NO_x) and $PM_{2.5}$, PM_{10} during project construction and long-range operations; these emissions will be under the SCAQMD thresholds for construction and operations. A number of individual projects in the area may be under construction simultaneously with the proposed project. Depending on construction schedules and actual implementation of projects in the area, generation of dust and pollutant emissions during construction could result in substantial short-term increases in air pollutants. However, each project would be required to comply with the SCAQMD's standard construction measures. According to the SCAQMD methodology, any project that does not exceed, or can be mitigated to less than, the daily threshold values will not add significantly to the cumulative impact. Construction and operational activities would not result in emissions in excess of SCAQMD's daily threshold values, and therefore the project would not result in cumulatively considerable net increase in criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard. There are no new impacts.

d) Expose sensitive receptors to substantial pollutant concentrations?

No Impact. Since completion of the Air Quality analysis for the OSA PEIR, SCAQMD has also adopted localized significance thresholds for onsite emissions associated with construction activities. The

SCAQMD developed localized significance thresholds (LSTs) for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site (offsite mobile-source emissions are not included the LST analysis). LSTs were not analyzed in the OSA PEIR.

Unlike the regional construction and operational emissions shown in Tables 3.3-1, 3.3-2 and 3.3-3, which are measured in pounds per day, the localized emission concentrations are measured in parts per million and refer to the amount of pollutant in a volume of air. These emissions can be directly correlated to health effects. The localized air pollution is evaluated against the LSTs, which are based on the ambient concentrations of a pollutant within the project Source Receptor Area, the size of the project site, and distance to the nearest sensitive receptor. LSTs represent the maximum emissions from a project site that are not expected to cause or contribute to an exceedance of the most stringent national or state AAQS. No significant localized impacts would occur from operation of the residential project because these types of land uses do not generate a substantial increase in stationary sources onsite (e.g., permitted sources, manufacturing).

Construction LSTs

LSTs are based on the California AAQS, which are the most stringent AAQS established to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those sensitive receptors most susceptible to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. The closest sensitive receptors surrounding the site are the residences to the south of the project site, within 82 feet (25 meters) of the boundary of the site. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters (SCAQMD 2008).Emissions generated by construction activities would temporarily increase pollutant concentrations from onsite equipment (primarily mobile emissions) and fugitive dust (PM_{10} and $PM_{2.5}$). Table 3.3-4 shows the localized maximum daily construction emissions without and with mitigation measures incorporated. Without mitigation, the maximum onsite daily construction emissions would exceed localized significance thresholds for PM_{10} and $PM_{2.5}$. With implementation of mitigation measures AQ-1 and AQ-8, project-related construction emissions would not exceed the screening level criteria for PM_{10} and $PM_{2.5}$. There are no new impacts.

Table 3.3-4
Localized Onsite Construction Emissions
(in pounds per day)

Source[1, 2]	*NO_x*	*CO*	*PM_{10}*	*$PM_{2.5}$*
Maximum Daily Onsite Construction Emissions – Unmitigated[3]	112	61	**12**	**8**
Maximum Daily Onsite Construction Emissions- Mitigated[4]	68	34	9	6
SCAQMD Localized Threshold	186	1,669	11	7
Exceeds Localized Significance Threshold With Mitigation?	No	No	No	No

Source: CalEEMod, Version 2011.1.1, SCAQMD 2003, and SCAQMD 2006: Based on LSTs for a project site in SRA 19 for a 4.5-acre site within sensitive receptors located at a distance of 82 feet (25 meters). Only onsite air pollutant emissions as per SCAQMD guidance.

[1] Air quality modeling based on construction phasing and equipment list provided by project applicant. Where specific construction information was not available, CalEEMod defaults were used.

[2] Fugitive dust emissions assume application of Rule 403, which includes watering exposed surfaces at least two times daily, and managing haul road dust, replacing ground cover quickly, and street sweeping.

[3] Maximum daily emission assumes overlap of (1) utilities and underground construction, off site road improvements, and grading.

[4] Includes reductions associated with and Mitigation Measure MM-7 which includes watering exposed surfaces at least three times daily, and Mitigation Measure AQ MM-8 requiring use of Tier 3 construction equipment or restricts overlap of paving with grading and utility installation.

[5] Thresholds exceedances are shown in **bold**.

Carbon Monoxide Hotspots

Vehicle congestion has the potential to create elevated concentrations of CO called "hot spots." Typical hot spot locations are where traffic congestion is highest such as at intersections where vehicles queue or slow down. CO hotspots have been found to occur only at intersections that operate at or below level of service (LOS) E (Caltrans 1997). If a project increases average delay at signalized intersections which would result in operations at Level of Service (LOS) E or F, a quantitative screening is required. Based on the traffic impact analysis prepared by Kunzman Associates (2012), the study area intersections would operate at LOS C or better at buildout of the proposed project. Therefore, a quantitative screening is not required, sensitive receptors in the area would not be substantially affected by CO emissions generated by operation of the proposed project. Furthermore, CO concentrations in the SoCAB and in the state have steadily declined. In 2007, the SCAQMD was designated as in attainment for CO under both the CAAQS and NAAQS. 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 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2011). The proposed project will not increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (see Section 3.16, *Transpiration and Traffic*). Localized air quality impacts related to mobile-source emissions would therefore not exceed established thresholds. There is no impact.

Air Quality Land Use Compatibility

Recent air pollution studies have shown an association between proximity to high traffic roadways and a variety of health effects, which are attributed to a high concentration of air pollutants generated by traffic vehicle exhaust. Because placement of sensitive land uses fall outside California Air Resources Board (CARB) jurisdiction, CARB developed and approved the *Proposed Air Quality and Land Use Handbook: A Community Health Perspective* in May 2005 for 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 the compatibility and associated health risk when placing sensitive receptors near existing pollution sources.

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 relative to proximity to air pollution sources. The key observation in these studies is that close proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. CARB recommends avoiding siting of 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." The nearest major road from the project site is Bake Parkway located approximately 600 feet west of the site, which at long range 2030 conditions would carry 38,000 vehicles (LSA Associates 2011). Consequently, the proposed project falls under the siting criteria of 100,000 vehicles per day for high-volume roadways and would not expose project occupants to harmful concentrations of air pollutants. Placement of residential uses near Bake Parkway would not result in a significant air quality impact from the exposure of persons to substantial air pollutant concentrations.

SCAQMD has developed Facility Information Detail (FIND), a web tool that allows a search for AQMD-regulated facilities that are required to have a permit to operate equipment that releases air emission pollutants. The Metropolitan Water District operates the OC-88 Pump Station that is located approximately 350 feet north of the project site. According to FIND, the Pump Station has a permit to operate a diesel generator for emergency purposes only; there are no major sources of toxic air contaminants (TACs) within 1,000 feet of the project site. The project would not have the potential to expose sensitive receptors to substantial TACs from stationary or mobile sources. Impacts would be less than significant and no mitigation is required. There are no impacts.

e) Create objectionable odors affecting a substantial number of people?

No New Impact. Though offensive odors from stationary sources rarely cause any physical harm, they still remain unpleasant and can lead to public distress generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source, wind speed, direction, and the sensitivity of receptors.

The OSA PEIR reasoned that construction activities occurring on Sites 1 through 7 would generate airborne odors associated with the operation of construction vehicles (i.e., diesel exhaust) and the application of architectural coatings. These odors would occur during daytime hours only and would be isolated to the immediate vicinity of the construction sites. The PEIR further reasoned that standard construction requirements would be imposed on the developers/applicants associated with these construction projects that would address odors from construction activities. As such, the OSA PEIR concluded that impacts associated with construction-generated odors would not affect a substantial number of people and impacts were considered less than significant.

The project would not emit objectionable odors that would affect a substantial number of people. The threshold for odor is if a project creates an odor nuisance pursuant to SCAQMD Rule 402, Nuisance, which states:

> A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The nearby pump station does not include treatment processes that would generate odors. The Baker Water Treatment Plant is a proposed regional project that will be built at the existing Baker Filtration Plant site, located 800 feet south of the project site. The EIR for the Baker Treatment Plant found odor impacts to be less than significant (ESA 2011). The proposed residences are not located near odor emitting uses and would not generate objectionable odors that would lead to a public nuisance; therefore, operational impacts would be less than significant. No further analysis is required.

During construction activities, construction equipment exhaust, application of asphalt and architectural coatings would temporarily generate odors. As discussed in section 3.3d, the closest sensitive receptors surrounding the site are the residences to the south of the project site, within 82 feet (25 meters) of the boundary of the site. With implementation of mitigation measures AQ-1 and AQ-8, project-related construction emissions would not significantly impact sensitive receptors. Mitigation measures which control construction emissions from equipment exhaust would also help to control excessive odors. Odors are dispersed (diluted) by the prevailing wind and dissipate with distance. Some residents south of site might detect construction related odors if they are downwind during construction. However, construction usually occurs on weekdays while people are typically at work and on Saturdays during the day; odors would be intermittent. Odors from typical construction activities such as paving, application of paint, or equipment exhaust are not toxic air contaminants and are not considered noxious or harmful.

Further, any construction-related odor emissions would be temporary, intermittent in nature, and would not constitute a public nuisance. Impacts associated with construction-generated odors would remain less than significant. There are no new impacts.

3.4 BIOLOGICAL RESOURCES

The analysis in this section is based on the OSA PEIR and on the following technical studies which are included in Appendix B to this Initial Study.

- Biological Resources Analysis, Serrano Highlands, City of Lake Forest, County of Orange, California. LSA Associates, Inc., June 2005.
- Special-Interest Plant Survey Results for Serrano Highlands, LSA Associates, Inc., February 2012.
- Sensitive Plant Survey Results for Serrano Highlands, LSA Associates, Inc., July 2005.
- Jurisdictional Delineation Report, Serrano Highlands, Lake Forest, County of Orange, California. LSA, August 2011.

Central and Coastal Orange County Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP)

The preparation of a comprehensive natural resources management conservation plan for central and coastal Orange County was completed in 1996. The Central and Coastal Orange County Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) and the associated Implementation Agreement (IA) covers thirteen cities. The City of Lake Forest City Council approved a Memorandum of Agreement with the County of Orange in September 1994 to participate in the NCCP. The purpose of the NCCP/HCP is to create a multispecies, multihabitat reserve system and to implement a long-term management program. It was developed to satisfy the requirements for both the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA).

The NCCP/HCP generally addresses vegetation communities and species associated with upland coastal sage scrub habitat. It is intended to focus on multiple species and habitats and address conservation of these species on a regional context. The three main target species are the coastal California gnatcatcher, cactus wren, and orange-throated whiptail. There are 26 other species that are also identified and afforded management protection under the NCCP/HCP. An additional 10 species of plants and animals that are either federally listed or treated as if they were listed according to FESA Section 10(a) are addressed within the NCCP/HCP.

The measures incorporated in the NCCP/HCP are intended to address the federal, state, and local project-specific mitigation requirements for the species and habitats addressed in the NCCP/HCP under FESA, CESA, CEQA, NEPA, and the Migratory Bird Treaty Act (MBTA). The NCCP/HCP is intended to streamline review of individual projects with respect to the species and habitats addressed in the NCCP/HCP, and to provide for an overall Habitat Reserve System.

The proposed project is not within the reserve system of the NCCP/HCP, and therefore, the planning development restrictions of the NCCP/HCP do not apply. However, since the OSA lies within the area of the NCCP/HCP, landowners not participating in the NCCP/HCP are provided with different mitigation options than those provided for participating landowners. Non-participating landowners may satisfy the

requirements of the FESA and CESA in relation to the species covered under the NCCP/HCP one of three ways:

- Onsite avoidance of take
- Satisfaction of the applicable FESA and CESA regulations through the regular permitting and consultation process (outside the NCCP/HCP)
- Payment of a mitigation fee to the nonprofit management organization established by the NCCP/HCP

Existing Setting

The project site is located at the northern terminus of Peachwood in the City of Lake Forest, Orange County, California. The site is located within the planning boundaries of the Central/Coastal Orange County NCCP/HCP. Site topography is hilly, consisting of a west-east trending ridge and associated tributaries; slopes are gentler on the part of the site west of Peachwood. The site is dissected by trails/roads (disturbed or barren). The project area also showed evidence of use as a paintball field. Several well structures/pump stations and a terrace drain are present; a chain-link fence surrounds much of the site.

The project site is 24.6 acres. The Pinnacle at Serrano Highlands was Site 6 of seven sites analyzed in the OSA PEIR. The site was identified as an 18-acre site however the site is now 24.6 acres. The OSA PEIR did not address the 6.6 acres of open space along the northern property boundary because they were not owned by the applicant and were not developable due to an easement. The 6.6 acres of open space are now owned by the applicant and have been included in 24.6-acre site, but they will remain undeveloped as open space within a fuel modification zone.

Field Surveys

A field survey of the site was carried out on October 12, 2004 to map the site's plant communities, prepare a list of plant and animal species for the site, and assess the habitat suitability for sensitive plant and animal species that are known from the project region. Focused surveys for sensitive plant species were conducted by LSA on June 17, 2005 and June 14, 2011 to determine the presence/absence of those species identified in the 2005 Biological Resources Analysis as having the potential to occur on the project site.

Plant Communities

Eight plant communities occur within the project site: coastal sage scrub (consisting of seven subtypes), mulefat scrub, sagebrush-grassland ecotone, southern cactus scrub, ruderal, developed, and disturbed. The locations of plant communities within the project site are shown in Figure 12, *Plant Communities*. Table 3.4-1 summarizes the acreages of the plant communities.

The dominant plant community on the project site is coastal sage scrub. Approximately 14.56 acres within the project's development footprint (including fuel modification zones) are covered by coastal sage scrub (CSS). CSS consist of eight subtypes, based on the dominant species: sagebrush-buckwheat scrub, sagebrush scrub, buckwheat scrub, sagebrush-black sage scrub, coyote brush scrub, mixed scrub/Mexican elderberry woodland, sagebrush-coyote brush scrub, and southern cactus scrub.

Table 3.4-1
Plant Community Acreages

Habitat Type or Sub-Type	Total Acres
Coastal Sage Scrub (2.3)*	14.56 (includes 7 subtypes below)
Sagebrush-Buckwheat Scrub (2.3.1)	1.21
Sagebrush Scrub (2.3.6)	5.75
Buckwheat Scrub (2.3.7)	1.67
Sagebrush-Black Sage Scrub (2.3.8)	3.62
Coyote Brush Scrub (2.3.9)	0.07
Mixed Scrub/Mexican Elderberry Woodland (2.3.10/8.4)	1.71
Sagebrush-Coyote Brush Scrub (2.3.12)	0.53
Sagebrush-Grassland Ecotone (2.8.1)	0.42
Southern Cactus Scrub (2.4)	0.59
Mulefat Scrub (7.3)	0.46
Ruderal (4.6)	0.74
Urban and Commercial (15.1)	1.06
Ornamental Landscaping (15.5)	0.45
Disturbed or Barren (16.1)	3.54
	21.82

* Orange County Plant Community Classification System number is in ().

Sagebrush-Buckwheat Scrub. California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*) co-dominate this subtype.

Sagebrush Scrub. California sagebrush dominates this habitat type, creating "islands" of nearly monotypic vegetation.

Buckwheat Scrub. This subtype is characterized by nearly monotypic stands of California buckwheat and usually contains little or no California sagebrush.

Sagebrush-Black Sage Scrub. California sagebrush and black sage (*Salvia mellifera*) dominate this habitat type.

Coyote Brush Scrub. Coyote brush (*Baccharis pilularis* ssp. *consanguinea*) dominates this habitat type.

Mixed Scrub/Mexican Elderberry Woodland. The mixed scrub habitat on site is composed of a mix of black sage, buckwheat, and California encelia (*Encelia californica*). It also contains, in moist or shaded areas, a great deal of Mexican elderberry (*Sambucus mexicana*).

Sagebrush-Coyote Brush Scrub. This habitat type is co-dominated by California sagebrush and coyote brush.

Southern Cactus Scrub. The composition of this habitat type is similar to the CSS habitat types but differs in that it has a 20 percent or greater component of cacti. On this site, the cacti are coastal prickly pear (*Opuntia littoralis*) and coastal cholla (*Opuntia prolifera*). The shrub components may include representatives from the various CSS types. Much of it is in the proposed fuel modification zone; cacti may be preserved in the nongraded areas of the fuel modification zones.

Sagebrush-Grassland Ecotone. This habitat type is characterized by a 5–20 percent cover by California sagebrush, with the remainder of the cover created by subshrubs, forbs, and grasses.

Mulefat Scrub. Mulefat scrub is made up of dense stands of mulefat *(Baccharis salicifolia*) and typically contains a lesser component of willow species (*Salix* spp.). This habitat type is typically associated with seeps, intermittent streambeds, and ephemeral drainages.

Ruderal. The term ruderal refers to weedy and/or early successional species, often nonnative grasses, that readily colonize disturbed ground. Species include red brome (*Bromus madritiensis*), mustard (*Brassica nigra* and *Hirschfeldia incana*), Russian thistle (*Salsola tragus*), tocalote (*Centauria melitensis*), and wild oat (*Avena* spp.), among others.

Urban and Commercial. This classification applies to all buildings, pavements, and highway rights-of-way.

Ornamental Landscaping. Ornamental landscaping consists of introduced trees, shrubs, flowers, and turf grass.

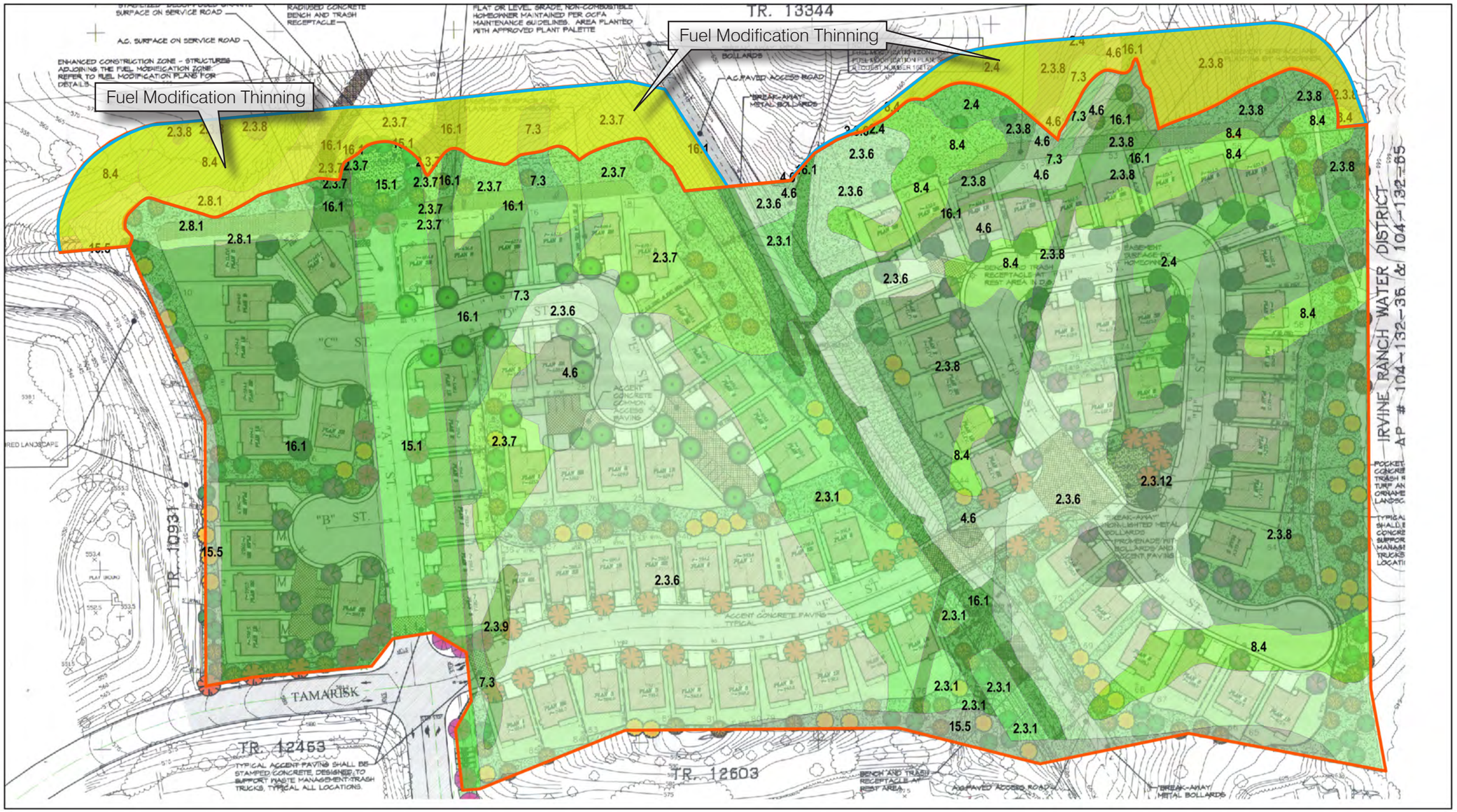
Disturbed. The dirt roads and trails that crisscross the site are highly disturbed and contain little or no vegetation. Some of the roads are graded and compacted; others are very sandy

Wildlife

The wildlife observed on the project site included 20 bird species, two lizards, and four mammals. The species observed are typical of the coastal sage scrub and other plant communities there, and include California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), desert cottontail (*Sylvilagus audubonii*), coyote (Canis latrans), and western fence lizard (*Sceloporus occidentalis*). The Biological Resources Report (Appendix B) provides a complete list of the wildlife observed.

Two additional species typical of the coastal sage scrub and cactus scrub habitats that occur on the site are the coastal California Gnatcatcher (*Polioptila californica californica*) and the cactus wren (*Campylorhynchus brunneicapillus*). These sensitive species are addressed in the next section.

Plant Communities



Source: LSA 2012

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Sensitive Species

Plants
No federally listed, State listed, proposed endangered, or threatened plant species were observed on the site during the biological field survey. Listed plant species, or species proposed for listing that were identified in the literature review as potentially occurring on site or in the study area, were thread-leaved brodiaea (*Brodiaea filifolia*) and slender-horned spineflower (*Dodechema leptoceras*). The probability of either species occurring on the site is low. Thread-leaved brodiaea is not likely to occur on site because it is normally associated with the heavy clay soils typical of grasslands and vernal pools. Slender-horned spineflower is not expected to occur on site because it tends to occur in areas of heavy alluvial activity, such as desert washes and dry creek beds.

The non-listed, sensitive, plant species that have a moderate to high probability of occurring on the site are: Catalina mariposa lily (*Calochortus catalinae*), intermediate mariposa lily (*Calochortus weedii* var. *intermedius*), and many-stemmed dudleya (*Dudleya multicaulis*). The focused surveys carried out in 2005 and 2011 did not find these or other sensitive plant species on the site.

Animals
The coastal California gnatcatcher, a federally Threatened species, was observed in the coastal sage scrub on the project site during the field surveys. The project site is not a part of the designated critical habitat for the California gnatcatcher. This species is covered by the Central Coastal NCCP. The Biological Resources Analysis concluded that marginally suitable habitat for the least Bell's vireo (*Vireo belli pusillus*), listed as "Endangered" by the CDFG and the USFWS, occurs within the project study area. The species was not observed on the project site and the likelihood of least Bell's vireo occurring there is low.

Two California Species of Concern were observed on the project site: the coastal cactus wren (*Campylorynchus brunneicapillus*) and the Cooper's hawk (*Accipter cooperi*). It is not known whether the Cooper hawk nests on the project site (the CSC designation for this species is only for nesting individuals).

Ten additional California Species of Concern were determined to have moderate to high potential to occur onsite based on the habitat preference for each respective species and the habitat types found onsite. The habitat preferences and listing status for each species is described in the Biological Resources Analysis included as Appendix B. These ten species are as follows: San Diego horned lizard, orange-throated whiptail, California legless lizard, northern red diamond rattlesnake, loggerhead shrike, pallid bat, California mastiff bat, San Diego black-tailed jackrabbit, northwestern San Diego pocket mouse, and San Diego desert woodrat.

Waters and Wetlands

A Jurisdictional Delineation of the study area was conducted by LSA in August 2011 and is included as Appendix B of this Initial Study. The project site contains a small drainage that runs in a southerly direction immediately east of Peachwood (Figure 13, *Jurisdictional Waters*). This drainage is estimated to contain 0.11 acres of ACOE jurisdictional waters and 0.38 acres of CDFG jurisdictional waters, none of which consist of jurisdictional wetlands. No wetlands are onsite and no federally protected wetlands areas occur on the project site.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional

plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

New Mitigation Required.

The OSA PEIR found that development of Site 6 (grading and construction) would impact moderate- to high-quality coastal sage scrub suitable for sensitive species. Loss of species or alteration of their habitat was considered a substantial adverse effect without mitigation. The PEIR found that payment of the NCCP fee and implementation of the construction avoidance measures would reduce potential impacts to sensitive species to less than significant levels. Further implementation of OSA PEIR MM 3.4-1 through MM 3.4-3 would reduce impacts to a less than significant level.

The proposed project would convert the site's existing habitats to developed uses and landscaping. A total of 21.82 acres would be impacted by project development or thinning for fuel modification and 2.78 acres would remain undisturbed. Approximately 13.7 acres belonging to 7 different plant communities would be converted as a result of grading and approximately 0.82 acres would be impacted by vegetation thinning in the fuel modification zone. Table 3.4-2 summarizes these impacts.

Table 3.4-2
Plant Community Impacts

Plant Community	Existing	Impacts		Total
		Grading	Vegetation Thinning	
Coastal Sage Scrub (2.3)*				
Sagebrush-Buckwheat Scrub (2.3.1)	1.21	1.21	–	1.21
Sagebrush Scrub (2.3.6)	5.75	5.65	0.10	5.75
Buckwheat Scrub (2.3.7)	1.67	1.39	0.28	1.67
Sagebrush-Black Sage Scrub (2.3.8)	3.62	3.36	0.26	3.62
Coyote Brush Scrub (2.3.9)	0.07	0.07	–	0.07
Mixed Scrub/Mexican Elderberry Woodland (2.3.10/8.4)	1.71	1.53	0.18	1.71
Sagebrush-Coyote Brush Scrub (2.3.12)	0.53	0.53	–	0.53
Sagebrush-Grassland Ecotone (2.8.1)	0.42	0.24	0.18	0.42
Southern Cactus Scrub (2.4)	0.59	0.50	0.09	0.59
Mulefat Scrub (7.3)	0.46	0.37	0.09	0.46
Ruderal (4.6)	0.74	0.69	0.05	0.74
Urban and Commercial (15.1)	1.06	0.92	0.14	1.06
Ornamental Landscaping (15.5)	0.45	0.45	–	0.45
Disturbed or Barren (16.1)	3.54	3.36	0.18	3.54
Total	**21.82**	**20.26**	**0.82**	**21.82**

Jurisdictional Waters

LEGEND

- Project Boundary
- Fuel Modification Boundary
- Survey Limit
- Potential Corps Jurisdiction (0.11 acre)
- Potential CDFG Jurisdiction (0.38 acre)
- Soil Pit

0 150
Scale (Feet)

Source: LSA 2011

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Impacts to Sensitive Plant Species

The project would not impact any state or federally listed threatened or endangered plants. The Special-Interest Plant Survey and Sensitive Plant Survey for the project did not reveal any impacts to habitats not covered by the NCCP/HCP. No federally listed, State listed, proposed endangered, threatened, or nonlisted special-interest plant species were observed on site during the spring survey, which was done at the appropriate time to detect the species that are likely to occur.

Impacts to Sensitive Animal Species

The coastal California gnatcatcher, a federally threatened species and the coastal cactus wren, a California Species of Concern, occur on the project site. Both species are covered under the NCCP/HCP.

The site is located within the jurisdiction of the NCCP/HCP, and a Section 10(a) permit has been issued for participating landowners and signatory agencies. Some portions of the property have utility easements in place; the easements are held by NCCP participating landowners. The balance of the land is owned by a nonparticipating landowner. For purposes of this discussion, the study area is split into two categories: (1) the easements held by participating landowners, and (2) the land covered by the NCCP but owned by nonparticipating landowners. The easements are shown in Figure 3.4-1. The balance of the property is subject to the NCCP in-lieu fee provision for mitigation. Within the easement areas, take of CSS, gnatcatchers, cactus wrens, and other species and habitats covered by the NCCP is already mitigated through the Participating Landowners' participation in the NCCP/HCP. Outside of the easement areas, take of covered species can be mitigated through the payment of in-lieu fees to the Nature Reserve of Orange County (NROC).

Within the project site, 1.65 acres are already covered by the NCCP/HCP and 14.55 acres are candidates for the fee program. The in-lieu fees would be paid to NROC prior to issuance of a grading permit for the proposed project and the fees would mitigate impacts to the California gnatcatcher. Because the gnatcatcher and the cactus wren are covered by the NCCP/HCP, the impacts do not require further mitigation. Therefore, overall impacts to these sensitive species are considered less than significant, provided the project remains consistent with the NCCP/HCP.

The Biological Resources Report concludes that there is low potential for the state and federally listed least Bell's vireo to occur on site during the breeding season. Typically, the least Bell's vireo needs dense riparian thickets for breeding habitat; however, with the increasing local populations, vireos have been observed nesting in Mexican elderberry and other "nontypical" habitat. Although the proposed project will impact small acreages of potential habitat for this species, it is not anticipated to directly impact this federally and State-listed species if the mitigation measures from the NCCP (listed below) are followed.

Among the ten California Species of Concern that have potential to occur on the project site, six are not identified species under the NCCP/HCP: California legless lizard, loggerhead shrike, pallid bat, California mastiff bat, San Diego black-tailed jackrabbit, and northwestern San Diego pocket mouse.

Nests of the four raptor species are protected under the MBTA and Fish & Game Code Section 3503. The MBTA prohibits "take" of birds (not only raptors) and their nests, where "take" includes efforts to hunt, trap, capture, or collect (only "collect" applies to nests). The Fish & Game Code section 3503 also prohibits impacts to raptor nests and eggs. Procedures for conducting nesting bird surveys are

described in BR MM-2. BR MM-4 mitigates impacts to nesting birds and BR MM-3 (OSA PEIR MM 3.4-4) further mitigates potential impacts to species or habitats not covered by the NCCP/HCP.

Impacts to the above species are mitigated to a less than significant level through implementation of the following OSA PEIR and new project-specific mitigation measures.

Applicable OSA PEIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR with no changes made. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed residential project. In cases where these OSA mitigation measures have been satisfied by studies prepared for this Initial Study, it is so noted in *italics*,

BR MM-1 (*OSA PEIR MMRP Mitigation Measure 3.4-1*) Sensitive Species Surveys. Where future development projects have the potential to reduce or eliminate habitat for native plant and wildlife species or sensitive habitats, including but not limited to those listed in OSA PEIR Appendix E (Sensitive Species Potentially Occurring within the Project Area), the project applicant shall conduct biological field surveys of the Project Area to characterize the extent and quality of habitat that would be impacted by project development. Surveys shall be conducted in accordance with current CDFG or USFWS survey protocols for the target species by qualified biologists or botanists. If no sensitive species are observed and the regulatory agencies agree with those findings then no further mitigation will be required for the species. Similarly, if no sensitive habitats are observed and the regulatory agencies agree with those findings then no further mitigation will be required. If sensitive species or habitats are documented on a specific site, and the species or habitat is covered by the NCCP/HCP the applicant shall conform and comply with the applicable requirements of the NCCP/HCP and proceed with MM 3.4-2. If the species or habitat is not covered in the NCCP/HCP, then refer to MM 3.4-3. For impacts to wetlands and other aquatic habitats, refer to MM 3.4-4. (*Satisfied by: Special-Interest Plant Survey Results for Serrano Highlands, LSA Associates, Inc., February 2012; Sensitive Plant Survey Results for Serrano Highlands, LSA Associates, Inc., July 2005*).

BR MM-2 (*OSA PEIR MMRP Mitigation Measure 3.4-2*). Loss of Coastal Sage Scrub Habitat and Plant and Animal Species Protected by the NCCP/HCP. Prior to recordation of a subdivision map or issuance of a grading permit, whichever comes first, the Applicant shall retain a qualified, permitted biologist to confirm the presence and quantity of coastal sage scrub habitat located on the project site. If coastal sage scrub habitat is found to be located on the project site, the Applicant shall submit proof to the Director of Development Services that in-lieu fees have been paid to the County of Orange Central/Coastal Natural Communities Conservation Plan (NCCP) Reserve. (*Note: the presence and quantity of coastal sage scrub has been identified in this Initial Study/Supplemental Mitigated Negative Declaration and in the Serrano Highlands Biological Resources Analysis and the Sensitive Plant Survey Results for Serrano Highlands, LSA Associates, Inc., both dated July 2005.)*

The Applicant shall also demonstrate to the satisfaction of the Director of Development Service compliance with the following NCCP construction impact avoidance measures or such measure in effect at the time of construction:

1. To the maximum extent practicable, no grading of CSS habitat that is occupied by nesting gnatcatchers will occur during the breeding season (February 15 through July 15). It is

expressly understood that this provision and the remaining provisions of these "construction-related minimization measures," are subject to public health and safety considerations. These considerations include unexpected slope stabilization, erosion control measures and emergency facility repairs. In the event of such public health and safety circumstances, landowners or public agencies/utilities will provide USFWS/CDFG with the maximum practicable notice (or such notice as is specified in the NCCP/HCP) to allow for capture of gnatcatchers, cactus wrens and any other CSS Identified Species that are not otherwise flushed and will carry out the following measures only to the extent as practicable in the context of the public health and safety considerations.

2. Prior to the commencement of grading operations or other activities involving significant soil disturbance, all areas of CSS habitat to be avoided under the provisions of the NCCP/HCP, shall be identified with temporary fencing or other markers clearly visible to construction personnel. Additionally, prior to the commencement of grading operations or other activities involving disturbance of CSS, a survey will be conducted to locate gnatcatchers and cactus wrens within 100 feet of the outer extent of projected soil disturbance activities and the locations of any such species shall be clearly marked and identified on the construction/grading plans.

3. A monitoring biologist, acceptable to USFWS/CDFG will be on site during any clearing of CSS. The landowner or relevant public agency/utility will advise USFWS/CDFG at least seven (7) calendar days (and preferably fourteen (14) calendar days) prior to the clearing of any habitat occupied by Identified Species to allow USFWS/CDFG to work with the monitoring biologist in connection with bird flushing/capture activities. The monitoring biologist will flush identified Species (avian or other mobile Identified Species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities. If birds cannot be flushed, they will be captured in mist nets, if feasible, and relocated to areas of the site to be protected or to the NCCP/HCP Reserve System. It will be the responsibility of the monitoring biologist to assure that Identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities on a timely basis.

4. Following the completion of initial grading/earth movement activities, all areas of CSS habitat to be avoided by construction equipment and personnel will be marked with temporary fencing or other appropriate markers clearly visible to construction personnel. No construction access, parking or storage of equipment or materials will be permitted within such marked areas.

5. In areas bordering the NCCP reserve system or Special Linkage/Special Management areas containing significant CSS identified in the NCCP/HCP for protection, vehicle transportation routes between cut-and-fill locations will be restricted to a minimum number during construction consistent with project construction requirements. Waste dirt or rubble will not be deposited on adjacent CSS identified in the NCCP/HCP for protection. Preconstruction meetings involving the monitoring biologist, construction supervisors and equipment operators will be conducted and documented to ensure maximum practicable adherence to these measures.

6. CSS identified in the NCCP/HCP for protection and located within the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves as recommended by the monitoring biologist.

BR MM-3 (*OSA PEIR MMRP Mitigation Measure 3.4-3*). Loss of Species or Habitats Not Covered by the NCCP/HCP. To mitigate for potential impacts to species or habitats not covered by the NCCP/HCP the following process shall be followed. The applicant has two options: (1) the applicant can obtain suitable replacement habitat and dedicate that property to the conservation and protection of sensitive species in perpetuity, or (2) the applicant can satisfy the requirements of the FESA and CESA under the consultation and permitting provisions of these regulations. In both of these options, the applicant shall first consult with the appropriate resource agency (CDFG and/or USFWS) and establish a mitigation plan for the specific species or habitat. Appropriate mitigation shall be identified in a mitigation plan prepared by the applicant. In this mitigation plan the applicant shall demonstrate capacity for funding appropriate mitigation and the mitigation must be legally assured. Habitat acquisition and set asides shall occur in areas with long-term conservation potential. Any mitigation proposed shall be approved by the City and appropriate resource agency prior to implementation. (*Satisfied by: Special-Interest Plant Survey Results for Serrano Highlands, LSA Associates, Inc., February 2012; Sensitive Plant Survey Results for Serrano Highlands, LSA Associates, Inc., July 2005; and Biological Resources Analysis, Serrano Highlands, City of Lake Forest, County of Orange, California. LSA Associates, Inc., June 2005*).

Project-Specific Mitigation Measures

BR MM-4 Prior to the issuance of a grading permit, the applicant shall demonstrate to the satisfaction of the Director of Development Services that grading activities shall either be scheduled outside the breeding season (December 31–July 31); or, if grading must be completed during the breeding season, surveys for nesting birds must be conducted. Procedures for conducting nesting bird surveys are described in BR MM-2.

BR MM-5 Prior to the issuance of a building permit, the applicant shall submit to the Director of Development Services for review and approval a precise landscape and irrigation construction plan prepared by a licensed landscape architect for the project consistent with the conceptual landscape plans approved by the Planning Commission. Prior to approval, all fuel modification and revegetation/landscaping plans shall be reviewed by a biologist with a working knowledge of local natural habitats and plant species. All nonnative plants that are potentially invasive via airborne seeds, or that are particularly difficult to control once escaped, will be prohibited from all parts of the project. Prohibited plant species include but are not limited to the following:

- Tree-of-heaven (Ailanthus sp.)
- Giant reed (Arundo donax)
- Garland chrysanthemum (Chrysanthemum coronarium)
- Pampas grass (Cortaderia spp.)
- Brooms (Cytisus spp.)
- Bermuda buttercup (Oxalis pes-caprae)
- Fountain/Kikuyu grass (Pennisetum spp.)

- German ivy (Senecio mikanoides)
- Tamarisk (Tamarix spp.)

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?

New Mitigation Required.

Habitats are considered to be sensitive biological resources based on: (1) federal, State, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of sensitive plants or animals occurring on site. LSA biologists mapped 14.56 acres of coastal sage scrub (CSS) on the project site, which is a habitat type considered sensitive by state and federal agencies.

The 14.56 acres of CSS habitat would either be removed by grading (13.74 acres) or impacted by vegetation thinning for fire management purposes (0.82 acres). These project impacts to CSS were considered in the OSA PEIR and therefore are not new significant impacts to biological resources.

According to the OSA PEIR, CSS habitat of moderate- to high-quality was a natural community onsite. Impacts to sensitive natural communities and riparian habitats from development of OSA Site 6 were identified as less than significant in the OSA PEIR after implementation of OSA PEIR MM 3.4-2 (BR MM-2 herein) which is incorporated into the proposed project.

Payment of the NCCP/HCP fee for loss of coastal sage scrub habitat and implementation of BR MM-2 and the NCCP/HCP construction avoidance measures would reduce potential impacts to this sensitive habitat to less than significant levels. Implementation of BR MM-1 and -3, would address potential impacts to sensitive habitats not covered by the NCCP/HCP. Thus, implementation of these mitigation measures and compliance with the terms of the NCCP/HCP would reduce potential impacts to sensitive habitat less than-significant level. Impacts would be mitigated to a less than significant level through existing OSA PEIR mitigation measures and project specific protection measures. Please see BR MM-1 through BR MM-5 in Section 3.4a above. The project would not result in new significant impacts to biological resources. Impacts are less than significant.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No New Impacts.

The OSA PEIR indicated that grading and construction of houses on Site 6 would require some fill, channel modification, or landscape changes that alter the hydrologic connections and water supply. Because of this, implementation of the proposed project could have a substantial adverse effect on wetlands and was considered a potentially significant impact. The PEIR determined successful implementation of OSA PEIR MM 3.4-4-A through 3.4-4-C (BR MM -6 to BR MM-8 herein) would reduce the level of project-related impacts to wetlands to a less than significant level. There are no new significant impacts.

A Jurisdictional Delineation of the study area was conducted by LSA in August 2011 and is included as Appendix B of this Initial Study. Project development would permanently impact up to 0.11 acres of

ACOE jurisdictional waters and 0.38 acres of CDFG jurisdictional waters, none of which consist of jurisdictional wetlands. No wetlands are onsite and no federally protected wetlands areas would be impacted. The impacts to the jurisdictional waters would require a permit from the ACOE under the Clean Water Act and a permit from the CDFG under the streambed alteration program (1602). With implementation of existing regulations and OSA PEIR mitigation measures, impacts would be less than significant. There are no new significant impacts.

Applicable OSA PEIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR with no changes made. They have been renumbered in this document for ease of reference. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. All of the mitigation measures listed apply to and will be implemented for the proposed residential project. In cases where these OSA mitigation measures have been satisfied by studies prepared for this Initial Study, it is so noted in *italics*.

BR MM-6 (*OSA PEIR MMRP Biological Resources Mitigation Measure MM 3.4-4-A*) Wetland Delineation. Prior to approval of Tentative Tract or Parcel Maps, a qualified wetland specialist shall conduct a wetland delineation in accordance with **U.S. Army Corps of Engineers (ACOE)** ~~USACE~~ methodology of all jurisdictional waters, seeps and stream channels within a site. If appropriate, this specialist shall also submit a request for a streambed alteration agreement from CDFG because CDFG also has jurisdiction over lakes and streams under Section 1600 of the Fish and Game Code. The wetland specialist shall prepare and submit a request for a jurisdictional determination to the **ACOE** ~~USACE~~ or CDFG as appropriate. Those waters not subject to the **ACOE** ~~USACE~~ jurisdiction could fall under the regulatory control of the local RWQCB. The wetland specialist shall submit the delineation documents along with the **ACOE** ~~USACE~~ jurisdictional determination to the RWQCB and request an assessment of jurisdiction. If the areas in question are subject to the **ACOE** ~~USACE~~ or RWQCB jurisdiction then the following two measures shall be implemented as required. If the areas in question are not jurisdictional, then there is no impact to wetlands and no further action is required. (*Satisfied with: Jurisdictional Delineation Report, Serrano Highlands, Lake Forest, County of Orange, California. LSA, August 2011)*

BR MM-7 (*OSA PEIR MMRP Biological Resources Mitigation Measure MM 3.4-4-B*) Permitting. **Prior to issuance of grading permits, the** ~~The~~ wetland specialist shall prepare an application for fill of waters subject to the **U.S. Army Corps of Engineers (ACOE)** ~~USACE~~ jurisdiction as determined in MM 3.4-4-A. If appropriate, this specialist shall also submit a request for a streambed alteration agreement from CDFG because CDFG also has jurisdiction over lakes and streams under Section 1600 of the Fish and Game Code. For wetlands that are not subject to the **ACOE** ~~USACE~~ jurisdiction within the Project Area, but RWQCB has indicated that they will assert jurisdiction, an application for a Waste Discharge Requirement or Waiver of Waste Discharge Requirement shall be submitted to the local RWQCB. The regulatory requirements contained within the Clean Water Act, the Waste Discharge Requirement, and the Streambed Alteration Agreement would mandate minimal intrusion into jurisdictional areas and compensatory mitigation for permanent impacts to these areas.

BR MM-8 (*OSA PEIR MMRP Biological Resources Mitigation Measure MM 3.4-4-C*) Restoration Plan. Once an approved wetland delineation is in place, the wetland specialist shall develop a comprehensive wetland restoration plan to offset impacts to these resources. Restoration could include on- or off-site construction of wetlands, contribution of funds to a local

mitigation bank, or restoration of existing yet relatively poor quality wetlands. The **U.S. Army Corps of Engineers** ~~USACE~~ goal is to permit no net loss of functions and values of wetland habitat. The replacement ratio of wetland acreage required to achieve this goal is a minimum of 1(new):1(old). **The exact ratio will be determined in the permit process with these agencies.**

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No New Impact. The OSA PEIR considered Site 6 to have a less than significant impact on wildlife movement because the site was surrounded by existing or future development and was not interfering with any open space that was the origin or destination of any wildlife movement. The project site is located in an urban setting and is not important for wildlife movement. The site is bounded by major roadways (Bake Parkway to the north, Trabuco Road to the south, and lake Forest Drive to the east) and surrounding land uses include an office park, residential development, undeveloped lands with pending applications for residential development (to the east), and a city park (to the west). There would be no new impact to wildlife movement.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measure is taken directly from the OSA PEIR with no changes made. It has been renumbered in this document for ease of reference. This mitigation measure applies to and will be implemented for the proposed project. In cases where these OSA mitigation measures have been satisfied, it is so noted in *italics*.

BR MM-9 (*OSA PEIR MMRP Biological Resources Mitigation Measure MM 3.4-5*) Mitigation for Fragmentation of Habitat and Wildlife Movement Corridors. In order to minimize the fragmentation of habitat and wildlife movement corridors the City shall require the applicant to include, to the extent feasible, specific design features to maintain connectivity between remaining open spaces. (*Note that the project applicant has satisfied BR MM-8 through designation of several acres to be conserved by the project homeowner's association as natural open space.*)

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

No New Impact. City of Lake Forest General Plan Policy 2.1 requires the City to conserve and protect natural plant and animal communities including those supporting rare and endangered species, riparian and wetlands habitat, and movement corridors impacts on local policies protecting biological resources. The City's main measure of compliance with Policy 2.1 is participation in the NCCP. Compliance with NCCP provisions is required by OSA PEIR mitigation measure 3.4-2, which is incorporated into the proposed project as BR MM-2. Impacts to local policies protecting biological resources were identified as less than significant in the OSA PEIR after implementation of mitigation measures 3.4-1 through 3.4-5, which are incorporated into the proposed project. No new impacts to biological resources compared to impacts identified in the OSA PEIR would result from development of the proposed project. Thus no further analysis is required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No New Impact. The project site is within the Orange County Central/Coastal NCCP, which serves as a Habitat Conservation Plan for the "take" of state- and federally threatened species. The project will comply with applicable provisions of the NCCP/HCP. Compliance with provisions of the NCCP is required by mitigation measure MM 3.4-2 of the OSA PEIR, which is incorporated into the proposed project as BR MM-2. The development area of the proposed project is within the development footprint of Site 6 analyzed in the OSA PEIR. No additional impacts to the NCCP would occur compared with those identified in the OSA PEIR.

Payment of a mitigation fee is required for impacts to coastal sage scrub under the NCCP/HCP. After payment of the mitigation fee no substantial impact to the NCCP/HCP would occur and the proposed project does not require any changes to the OSA PEIR related to biological resources. There are no new impacts.

3.5 CULTURAL RESOURCES

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

No Impact. Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the State Historical Resources Commission, a local register of historical resources, or the lead agency. Generally a resource is considered to be "historically significant," if it meets one of the following criteria:

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

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

iii) 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

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

No impact to historic resources was identified in the OSA PEIR for Site 6 because there were no structures. The site is vacant and does not currently contain any structures. As discussed in the OSA PEIR, there are no historical resources listed onsite in the California Register of Historic Resources (CRHR), the National Register of Historic Places, or a local register. No records of historic resources on or within 0.5 mile of the site were identified in a records search by the South Central Coastal Information Center in 2005 (EIP Associates 2008). There are no impacts.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

No New Impact. There were 83 archaeological sites (including 25 isolated artifacts) within 0.5 mile of the seven properties analyzed in the OSA PEIR. There were 12 archaeological sites on the seven properties; none of the isolated artifacts were on the properties (EIP Associates 2008). The specific locations of the archaeological sites were not published for protection of those sites. As with all development in areas

that have known sensitive archaeological sites, there is potential for artifacts or burials to be uncovered during site grading. As with the OSA PEIR, project impacts to archaeological resources would be potentially significant. The proposed project was adequately addressed. Implementation of the following OSA EIR mitigation measures would reduce such impacts to less than significant. There are no new impacts.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures (3.5-1 through 3.5-4) are taken directly from the OSA PEIR. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed project.

CR MM- 1 (*OSA PEIR MMRP Mitigation Measure 3.5-1*). Prior to issuance of a grading permit for any site within the Project Area, a qualified archaeologist shall be retained by the applicant for that grading permit to provide professional archaeological services. The archaeologist shall be present at the pre-grading conference to establish procedures for archaeological resource surveillance. Those procedures shall include provisions for temporarily halting or redirecting work to permit sampling, identification and evaluation of resources deemed by the archaeologist to potentially be historical resources or unique archaeological resources under CEQA. If, before grading, any portions of the property subject to the grading permit have been identified as sites, which may have such resources present and may be impacted by development, the archaeologist shall conduct a site survey and records search and such further examinations as may be needed to assess the significance of the resources. If the archaeological resource is determined to be a unique archaeological resource, options for avoidance ~~of~~ **or** preservation in place shall be evaluated and implemented if feasible. In the event that avoidance or preservation in place is infeasible and the archaeologist determines that the potential for significant impacts to such resources exists, a data recovery program shall be expeditiously conducted. The archaeologist also shall conduct on-site archaeological monitoring for the grading operation. Should historical resources or unique archaeological resources be discovered during the grading operation, grading activities shall be modified to allow expeditious and proper analysis and/or salvage of the resources. Disposition of the resources shall be within the discretion of the City of Lake Forest. **If prehistoric archaeological sites (not isolates) are discovered during monitoring of earthmoving, Native American representatives shall be contacted to observe activities and shall contribute to discussion of any treatment proposed.**

CR MM-2 (*OSA PEIR MMRP Mitigation Measure 3.5-2*).The qualified archaeologist **retained by the applicant** shall prepare monthly progress reports to be filed with the site developer(s) and the City of Lake Forest.

CR MM-3 (*OSA PEIR MMRP Mitigation Measure 3.5-3*). Artifacts recovered shall be prepared, identified, and catalogued before donation to the accredited repository designated by the City of Lake Forest. State of California Guidelines for the Curation of Archaeological Collections shall be consulted regarding the treatment of recovered artifacts. Any artifacts determined to be insignificant shall be offered to local schools for use in educational programs.

CR MM-4 (*OSA PEIR MMRP Mitigation Measure 3.5-4*). The qualified archaeologist **retained by the applicant** shall prepare a final report to be filed with the site developer(s), the City of Lake

Forest, and the South Central Coastal Information Center. The report shall include a list of specimens recovered, documentation of each locality, interpretation of artifacts recovered and shall include all specialists' reports as appendices.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No New Impact. As described in the OSA PEIR, many of the rock and sediment formations beneath Orange County, particularly those originating during the Miocene Epoch (25 to 4 millions years ago) contain important fossils. Part of the site surface consists of Capistrano Formation sandstone of early Pliocene and Miocene age (USGS 2004; the Pliocene Epoch extends from approximately 4 million to 1.8 million years ago); sandstone of this Formation also underlies colluvium on other parts of the site. Remains of a whale and a rare dolphin have been found in portions of nearby projects. The City's General Plan identifies most of the City, including the project site, as sensitive for paleontological resources. Surveys throughout Orange County have also revealed crocodile, bony fish, and shark fossils. Significant paleontological resources, that is, fossils, could be buried in soil and rock onsite, and could be damaged by site grading and project construction. As with the OSA PEIR, impacts to paleontological resources would be potentially significant. However, implementation of OSA PEIR mitigation measures 3.5-5 through 3.5-8 (CR MM-5 through CR MM-8) would reduce impacts to paleontological resources to less than significant. Therefore, the proposed project was adequately addressed and there are no new impacts.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures (3.5-5 through 3.5-8) are taken directly from the OSA PEIR Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed project.

CR MM-5 (*OSA PEIR MMRP Mitigation Measure 3.5-5*). Before issuance of a grading permit, a qualified paleontologist shall be retained by the site developer(s) to provide professional paleontological services. **Prior to commencement of construction, the paleontologist will develop a research design, based on current information, which will include specific research questions and what types of data (fossils, micropaleontological analysis, etc) will permit those questions to be answered. The research design should be sufficient to ensure that future fossils recovered can be placed into a regional context and contribute new information to science. During** ~~Specifically, during~~ grading activities, the qualified paleontologist shall conduct on-site paleontological monitoring for the project site. Monitoring shall include inspection of exposed surfaces and microscopic examination of matrix to determine if fossils are present. The monitor shall have authority to divert grading away from exposed fossils temporarily in order to recover the fossil specimens. Cooperation and assistance from on-site personnel will greatly assist timely resumption of work in the area of the fossil discovery. **Fossil localities discovered require specific information be recorded on location and elevation of fossils, taking of samples for analysis, stratigraphic column be developed and fossils must be identified by qualified experts.**

CR MM-6 (*OSA PEIR MMRP Mitigation Measure 3.5-6*). The qualified paleontologist **retained by the applicant** shall prepare monthly progress reports to be filed with the site developer(s) and the City of Lake Forest.

CR MM-7 (*OSA PEIR MMRP Mitigation Measure 3.5-7*). Fossils recovered shall be prepared, identified, and cataloged before donation to an accredited repository designated by the City of Lake Forest. **The principal paleontologist will develop a research design to place newly and previously discovered fossils from the project area into a regional context and will specifically include research questions to be answered during fossil recovery work.**

CR MM-8 (*OSA PEIR MMRP Mitigation Measure 3.5-8*). The qualified paleontologist **retained by the applicant** shall prepare a final report to be filed with the site developer(s) and the City of Lake Forest. The report shall include a list of specimens recovered, documentation of each locality, interpretation of fossils recovered and shall include all specialists' reports as appendices.

d) Disturb any human remains, including those interred outside of formal cemeteries?

No New Impact. Impacts to human remains were found to be less than significant in the OSA PEIR. California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered within the project site, disturbance of the site shall remain halted until the Coroner has conducted an investigation into the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Treatment of Native American human remains is also subject to protections specified in California Public Resources Code Section 5097.98, as outlined in the OSA PEIR. The project would comply with existing law and no new significant impacts to human remains would occur. There are no new impacts.

3.6 GEOLOGY AND SOILS

Information in this section is based partly on the following technical reports:

- *Geotechnical Reconnaissance and Update Report for Tentative Tract 15594 (Lots 1 through 85)*, Lake Forest, Orange County, California. Geosoils, Inc., August 3, 2011.
- *Limited Preliminary Geotechnical Investigation, Serrano Highlands, Tentative Tract 15594, City of Lake Forest, California.* NMG Geosoils, Inc., September 30, 2004.

Copies of these studies are included in the Technical Appendices to this Initial Study (Appendix C).

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to geology and soils:

PPP GEO-1 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G1*) Prior to the issuance of precise grading permits, the applicant shall prepare and submit a final (precise) grading plan to the Building Division of the Development Services Department showing building footprints, new and revised pads and elevations of finished grades, drainage routes, retaining walls, erosion control, slope

easements, structural best management practices conforming to the approved water quality management plan, and other pertinent information.

PPP GEO-2 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G2*) Prior to the issuance of precise grading permits, the applicant shall in a manner meeting the approval of the City Engineer:

- Design provisions for surface drainage; and
- Design all necessary storm drain facilities extending to a satisfactory point of disposal for the proper control and disposal of storm runoff; and
- Dedicate the associated easements to the City of Lake Forest, if determined necessary by the City Engineer.
- Prior to building permit final inspection said improvements shall be constructed in a manner meeting the approval of the City Engineer.

PPP GEO-3 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G3*) Prior to approval of the final design plans and issuance of a grading permit, the applicant shall conduct a site-specific geotechnical investigation for the entire site and prepare a report that fully assesses the geologic and soil conditions of the site. As part of the report preparation, soil sampling and any geotechnical testing will be completed at each location where structures are to be erected. The report shall provide grading and structural design recommendations for avoiding liquefaction, subsidence or collapse for each of the proposed structures. The recommendations shall be implemented by the Project Applicant.

PPP GEO-4 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G4*) During project grading and construction activities, the following measures shall be implemented by the applicant as monitored by the Director of Development Services and Director of Public Works/City Engineer.

a) Normal watering procedures or other dust palliative measures shall be followed during earth moving and construction operations to minimize fugitive dust emissions in compliance with SCAQMD Rule 403. Soil binders shall be spread on site, unpaved roads, and parking area in compliance with Rule 403.

b) Where practical, heavy duty construction equipment shall be kept on-site when not in operation to minimize exhaust emissions associated with vehicles entering and exiting the project site.

c) Restrict traffic speeds on all unpaved road to 15 miles per hour or less, and provide a flag person to properly guide traffic and ensure safety at the construction site.

d) Suspend all grading operations when wind speeds exceed 25 miles per hour and during second stage smog alerts.

e) Comply with SCAQMD Rules 402 and 403 which state that no dust impacts off-site sufficient to be called a nuisance are created and restrict visible emissions from construction and grading, respectively.

f) Use low emission mobile construction equipment (i.e., tractors, scrapers, dozers, etc.) where practical. Shut off engines when not in use.

g) Maintain construction equipment in peak operating condition to reduce operating emissions.

1) Use low sulfur fuel for equipment to the extent feasible.

2) Use electric equipment whenever practicable.

3) Moisten soil to grading to 12% soil moisture.

4) Water exposed surfaces at least twice daily under calm conditions and as often as needed on windy days when winds are less than 25 miles per hour or during dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.

5) Treat any area that will be exposed for extended periods with a soil conditioner to stabilize soil or temporarily plant with vegetation.

6) Wash mud-covered tires and under-carriages of any trucks leaving construction sites.

7) Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing project sites.

8) Provide for permanent sealing of all graded areas, as applicable, at the earliest practicable time after soil disturbance.

PPP GEO-5 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G5)* This project necessitates the construction of public and/or private infrastructure improvements. Prior to the issuance of preliminary or precise grading permits, the applicant shall construct, or enter into an agreement and post security, in a form and amount acceptable to the City Engineer, guaranteeing the construction of public and/or private improvements, in conformance with applicable City standards and the City's Capital Improvement Policy, including but not limited to:

a) Street improvements including, but not limited to: pavement, curb and gutter, medians, sidewalks, drive approaches, street lighting, signing, striping as follows:

b) Traffic signal systems, interconnect traffic signal preemption devices and other traffic control and management devices

c) Storm drain facilities

d) Subdrain facilities

e) Landscaping and computerized irrigation control system (for all public streets, parks and public areas).

f) Sewer, reclaimed and/or domestic water systems, as required by the appropriate sewer and water districts as well as the Orange County Fire Authority when appropriate.

g) Riding, hiking and bicycle trails adjacent to or through the project site.

h) Undergrounding of existing overhead and proposed utility distribution lines.

i) Transit-related improvements depicted on the approved tentative map

j) Plans for improvements, including proposed and relocated utility lines, shall be approved by the Public Works Director/City Engineer based on the City's ordinances, standards, and policies, including, but not limited to, those design and construction standards adopted by the City or otherwise reasonably determined by the Director to be applicable to the project. Plans for signing, striping, and other traffic control devices shall be approved by the City Traffic Engineer. Water improvement plans shall be approved by the Fire Marshal, the local water district, and the Public Works Director/City Engineer. The water distribution system and appurtenances shall conform to the applicable laws and adopted regulations enforced by the Orange County Health Department. Public sewer and reclaimed water improvement plans shall be approved by the local sewer agency and the Public Works Director/City Engineer. The requirement for the reclaimed water line for irrigation is contingent upon an existing line within reasonable proximity to the site. Construction of improvements shall be under the inspection of the Public Works Department.

PPP GEO-6 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G6*) Prior to issuance of a grading permit, any easement that lies within or crosses rights-of-way proposed to be deeded or dedicated to the City, shall be subordinated by the applicant to the City prior to City acceptance of the rights-of-way, unless otherwise exempted by the Director of Public Works/City Engineer based on the City's ordinances, standards, and policies, including, but not limited, to those design and construction standards adopted by the City or otherwise reasonably determined by the Director to be applicable to the project.

PPP GEO-7 (*OSA PEIR MMRP Geology, Soils, And Mineral Resources Grading Standard Conditions of Approval G7*) Prior to issuance of a grading permit, a recordable instrument providing for reciprocal ingress and egress access easements between and among the parcels with access via private drives shall be submitted by the applicant to the City of Lake Forest for review and approval of the City Attorney, Director of Development Services

and the Director of Public Works/City Engineer. The instrument shall be approved if it is appropriate recordable form, and adequately provides for reciprocal access in a manner consistent with the City's ordinances, standards, and policies, including, but not limited, to those public design and construction standards adopted by the City or otherwise reasonably determined by the Directors to be applicable to the project.

PPP GEO-8 (*OSA PEIR MMRP Legal Requirements for Geology, Soils and Mineral Resources*) Compliance with California Building Code Seismic Zone 4 Standards.

PPP GEO-9 (*OSA PEIR MMRP Legal Requirements for Geology, Soils and Mineral Resources*) Site specific review by California Certified Engineering Geologist.

PPP GEO-10 (*OSA PEIR MMRP Legal Requirements for Geology, Soils and Mineral Resources*) Implementation of National Pollution Discharge Elimination System (NPDES) Best Management Practices (BMPs).

PPP GEO-11 (*OSA PEIR MMRP Legal Requirements for Geology, Soils and Mineral Resources*) Preparation and implementation of Storm Water Pollution Prevention Plan (SWPPP).

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

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No New Impact. The Alquist-Priolo Earthquake Fault Zoning Act was passed to prevent construction of buildings used for human occupancy on the surface of active faults, in order to minimize the hazard of surface rupture of a fault to people and buildings. Before cities and counties can permit development within Alquist-Priolo Earthquake Fault Zones, geologic investigations are required to show that the sites are not threatened by surface rupture from future earthquakes. The project site is not in an Alquist-Priolo Earthquake Fault Zone; the nearest such Zone to the site is approximately 15 miles north of the site (CDMG 2000). An active fault is a fault that has had surface displacement within the last 11,000 years. No evidence of active faulting was observed during prior geotechnical work on the site. The nearest known fault to the site is an unnamed fault approximately 0.25 mile southwest of the site; the fault is not classified as active by the California Geological Survey (CGS 2011). Project development would not result in hazards to persons or structures due to surface rupture of a known fault. The proposed 85 unit single-family project was adequately addressed in the OSA PEIR and the impacts were fully analyzed and/or mitigated in the prior OSA PEIR. No new or different impacts will result from the proposed project.

ii) Strong seismic ground shaking?

No New Impact. There are many known faults in the region. The fault likely to produce the strongest ground shaking onsite is the Chino - Central Avenue Fault, capable of generating an earthquake of maximum moment magnitude 6.7. Moment magnitude is a measure of the amount of energy released in an earthquake, and is a logarithmic scale, such that each one-point increase in magnitude represents a tenfold increase in amplitude of the waves as measured at a specific location, and a 32-fold increase in energy. Seismic design parameters based on the 2010 California

Building Code (CBC) are provided in the geotechnical reconnaissance and update report; the project would be required to comply with those parameters in design of proposed structures.

Impacts from ground shaking were identified as less than significant in the OSA PEIR**.** The intensity of development in the proposed project would be the same 85-unit development as that proposed for Site 6 in the OSA PEIR. Therefore the impacts were fully analyzed and/or mitigated in the prior OSA PEIR. With implementation of existing PPPs, no new or different impacts will result from the proposed project.

iii) Seismic-related ground failure, including liquefaction?

No New Impact. Liquefaction refers to loose, saturated sand or silt deposits that behave as a liquid, and lose their load-supporting capability, when strongly shaken. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction. Parts of the northern, western, and central portions of the project site are in zones of required investigation for liquefaction designated by the California Geological Survey. This phenomenon occurs only below the water table; but after liquefaction has developed, it can propagate upward into overlying non-saturated soil, as excess pore water dissipates. Groundwater was not observed in onsite borings and all alluvial materials susceptible to liquefaction will be removed and replaced with compacted fill materials in accordance with the project's Geotechnical study. Compliance with the study's recommendations shall be implemented by the project applicant pursuant to PPP GEO-3. Liquefaction-related hazards would be less than significant, and with implementation of existing PPPs, no new impact would occur.

iv) Landslides?

No New Impact. No landslides were observed on the site surface or during subsurface borings onsite (GSI 2004). In addition, the site is not mapped within a zone of required investigation for earthquake-induced landslides by the California Geological Survey. Thus, the risk of earthquake-induced landslide onsite is considered low. Impacts arising from liquefaction were found to be less than significant, after compliance with regulatory requirements in the OSA PEIR. No new significant impact would occur with implementation of existing PPPs, regulatory requirements, and applicable OSA mitigation measures.

b) Result in substantial soil erosion or the loss of topsoil?

No New Impact. Impacts of project construction on soil erosion were identified in the OSA PEIR as less than significant after compliance with regulatory requirements. The statewide regulatory program governing potential water pollution from construction sites, the General Permit for Storm Water Discharges from Construction and Land Disturbance Activities ("Construction General Permit"), was updated by the State Water Resources Control Board (SWRCB) in 2009. The project would comply with the Construction General Permit by preparing and implementing a Stormwater Pollution Prevention Plan (SWPPP) specifying Best Management Practices (BMPs) that the project would use to minimize or avoid water pollution during project construction, including pollution through soil erosion. Requirements of the Construction General Permit issued in 2009 changed substantially compared to the previous Construction General Permit issued in 1999 (Order No. 99-08-DWQ). For example, the 2009 Construction General Permit requires projects to estimate the risk of sedimentation a project poses to receiving waters and downstream waters. The OSA PEIR stipulated that the SWPPP is a "live" document that must be kept current by the person responsible for its implementation. The project would comply with the Construction General Permit as updated by the SWRCB. No new significant and unavoidable impact will

occur as a result of the proposed project. Specific BMPs to be used to minimize soil erosion are discussed in this Initial Study in Section 3.9, *Water Resources*.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

No New Impacts. Hazards related to unstable soils were found to be less than significant, after compliance with regulatory requirements, in the OSA PEIR. Site soils prone to collapse or consolidation, and unsuitable for supporting structures, were found onsite. Removal of alluvial and colluvial soils[2], and weathered bedrock, to depths ranging from 2 to 35 feet, is recommended by the geotechnical investigation. Compliance with the study's recommendations shall be implemented by the project applicant pursuant to PPP GEO-3. There are no new impacts with implementation of existing PPPs, regulatory requirements, and applicable OSA mitigation measures.

The primary cause of ground subsidence is withdrawal of groundwater; withdrawal of oil can also result in subsidence. Subsidence is not considered a hazard to the site because the site is underlain by sandstone bedrock. As discussed in Section 3.6aiii, no significant and unavoidable impacts are anticipated and impacts will remain less than significant. There are no new impacts.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No New Impacts. The expansion potential of existing site soils was found to be low to very low in the geotechnical review for the proposed project. Hazards arising from expansive soils were identified in the OSA PEIR as less than significant after compliance with regulatory requirements. There are no new impacts.

Slope Creep

Soils at the site may be expansive and therefore, when the soils dry, they may shrink and develop surface cracks. Such soils are susceptible to surficial slope creep, especially with seasonal changes in moisture content. The extent and depth of these shrinkage cracks depend on many factors such as the nature and expansivity of the soils, temperature and humidity, and extraction of moisture from surface soils by plants and roots. When seasonal rains occur, water percolates into the cracks and fissures, causing slope surfaces to expand, with a corresponding loss in soil density and shear strength near the slope surface. After several annual cycles of wet and dry seasons, the outer three to five feet of slope materials experience a very slow, but progressive, outward and downward movement, known as slope creep. For slope heights greater than 10 feet, this creep related soil movement will typically impact all rear yard flatwork and other secondary improvements that are located within about 15 feet from the top of slopes, such as swimming pools, concrete flatwork, etc, and in particular the tops of slope fences/walls. This influence is normally in the form of settlement and tilting of the proposed improvements. The shrinking, swelling, and creep continue over the life of the improvements, and generally become progressively worse.

The geotechnical reconnaissance and update report recommends that all of the following measures be used to reduce potential hazards and property damage due to slope creep: setbacks of improvements from tops of slopes; joints between improvements; stiffening; and deepening of foundations; and

[2] Colluvial soils are those that have slid to the base of a slope or barrier.

provision of information about hazards related to slope creep to any homeowners and homeowners association by the developer. Compliance with recommendations of the geotechnical report is required by existing PPPs. The project would comply with recommendations in the project geotechnical review. No new significant impacts would occur with implementation of existing PPPs.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The project would include installation of sewer laterals connecting to sewer mains in surrounding roadways, and would not involve the use of alternative wastewater disposal systems. No impact would occur.

3.7 GREENHOUSE GAS EMISSIONS

Project Design Features

The following Project Design Features (PDFs) relate to potential greenhouse gas emissions impacts:

GHG PDF-1 (*OSA PEIR MMRP Global Climate Change GCCPDF2*) Residential development shall be constructed with the following features to reduce energy consumption so long as they pose no conflict with applicable Building Code requirements: installation of a majority of Energy Star appliances; installation of high efficiency HVAC equipment with SEER rating of 13 or higher and TXV valve; installation of vinyl frame windows with dual pane low emissivity glass; installation of natural gas clean burning fireplaces; installation of water efficient plumbing fixtures to reduce water consumption; and provision of an option to the homeowner to include electric vehicle charging facilities in the residence garage.

GHG PDF-2 (*OSA PEIR MMRP Global Climate Change* GCCPDF3) Bicycle lanes and walking paths shall be incorporated into the street system of new residential development to provide alternative circulation routes to reach logical points of destinations such as schools, parks and retail areas.

Would the project:

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

No New Impact.

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 greenhouse gas (GHG) emissions. In addition to the requirements under AB 32 to address GHG emissions and global climate change in general plans and CEQA documents, Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines for addressing global warming emissions and mitigating project-generated GHG emissions. OPR transmitted the proposed guidelines to the California Natural Resources Agency (CNRA) and the guidelines were adopted on December 30, 2009. The amended CEQA Guidelines became effective on March 18, 2010.

Construction and operation of project development would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the project's

operation (as opposed to its construction). The proposed project would result in an increase in GHG emissions from transportation sources, offsite energy production required for onsite activities, natural gas used on site for heating and cooking, water use, and waste disposal.

In the OSA PEIR, the City concluded that OSA contributions of GHG emissions are significant and unavoidable. However, since certification of the OSA PEIR, the new CEQA Guidelines for GHG were adopted. Additionally, no project level analysis for GHG emissions was conducted for Site 6.

Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact. The State of California, through its governor and its legislature, has established a comprehensive framework for the substantial reduction of GHG emissions over the next 40-plus years. This will occur primarily through the implementation of AB 32 and SB 375 which address GHG emissions on a statewide cumulative basis.

GHG emissions generated by the project are associated with the new area sources (natural gas use, landscape equipment, etc.) from the new building structures, transportation emissions associated with vehicles traveling to and from the project site, and indirect emissions associated with purchased energy, energy associated with water (conveyance, treatment, distribution, and treatment of wastewater), and waste disposal. In addition, annual average construction emissions were amortized over 30 years and included in the emissions inventory to account for GHG emissions from the construction phase of the project.

The proposed project would generate approximately 1,679 metric tons (MTons) of GHG per year. The total increase in GHG emissions onsite from the project would not exceed SCAQMD's proposed screening threshold of 3,000 MTons, therefore the proposed project's cumulative contribution to GHG emissions would be less than significant. There are no new impacts.

Table 3.7-1
Project-Related GHG Emissions

Source	*GHG Emissions (MTons/Year)*
Transportation	1,243
Energy	354
Area Sources	2
Water	31
Waste	45
Amortized Construction Emissions[1]	22
Total All Sectors	**1,697**
SCAQMD Screening Threshold	3,000
Exceeds Proposed SCAQMD ScreeningThreshold?	

MTons: metric tons
[1] Construction emissions are amortized over 30 years.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed project.

GHG MM-1 ~~(*OSA PEIR MMRP Mitigation Measure MM GCC1*) The City shall comply with the future requirements for implementation of AB 32 and SB 97 once those implementation requirements are developed.~~ (*The City has satisfied this obligation through the analysis contained in this Initial Study/Supplemental Mitigated Negative Declaration*.)

GHG MM-2 (*OSA PEIR MMRP Mitigation Measure MM GCC2*) Prior to the issuance of building permits for new commercial and retail projects or residential projects within the Opportunities Study Area, the City shall review the plans to confirm that the project complies with the requirements of Title 24 of the California Code of Regulations.

GHG MM-3 (*OSA PEIR MMRP Mitigation Measure MM GCC4*) **Prior to issuance of grading permits the** ~~the~~ City shall identify energy efficient street lights and water and wastewater pumps and treatment systems which are currently available and which when installed will provide for a 10 percent reduction beyond the 2007 baseline energy use for this infrastructure, and shall require the use of this technology in all new development. All new traffic lights installed within the City shall use LED technology.

GHG MM-4 (*OSA PEIR MMRP Mitigation Measure MM GCC5*) The City shall require all new development projects in the Opportunities Study Area to recycle and/or salvage at least ~~25~~ **50** percent of nonhazardous construction and demolition debris. To implement this requirement, the applicant shall submit a construction waste management plan for review and approval of the Development Services Director prior to issuance of a Building Permit. The construction waste management plan shall identify materials to be diverted from disposal and whether the materials will be stored on-site or commingled. Excavated soil and land-clearing debris do not contribute to this credit. Calculation can be done by weight or volume but must be documented.

GHG MM-5 (*OSA PEIR MMRP Mitigation Measure MM GCC6*) Prior to approval of a Site Development Permit for new development in the Opportunity Study Area, the City shall require that new development within the Opportunity Study Area use reclaimed water for public and common area landscaping where available; install 50 percent native/drought-tolerant plant species in developer-installed landscaped areas; and utilize "smart" advanced capability controllers (e.g., Weather-Trac) to reduce water and energy consumption.

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

No Impact. CARB adopted the Scoping Plan on December 11, 2008. The Scoping Plan is California's GHG reduction strategy to achieve the state's GHG emissions reduction target established by AB 32, which is 1990 levels by year 2020. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard (LCFS), California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the corporate average fuel economy (CAFE) standards, and other early action measures would ensure the state is on target to achieve the GHG emissions reduction goals

of AB 32. The project's GHG emissions would be further reduced from compliance with these statewide measures.

The state of California recently adopted the 2008 Building and Energy Efficiency Standards and the 2010 Green Building Code. The project would be constructed to achieve the energy efficiency standards of the 2008 Building and Energy Efficiency Standards. The 2008 Standard is 15 percent more energy efficient compared to the 2005 Building and Energy Efficiency Standards. CARB and the EPA have also adopted new fuel efficiency standards for model years 2012 through 2016. The Scoping Plan also calls for more stringent fuel efficiency standards model years 2016 through 2020 under Pavley II. Because the proposed project would not exceed the SCAQMD's proposed significance threshold for GHG emissions and would achieve the 2008 building and energy efficiency standards, the proposed project would not have the potential to interfere with the State of California's ability to achieve GHG reduction goals and strategies. There are no impacts.

3.8 HAZARDS AND HAZARDOUS MATERIALS

The information in this Section is based in part on the following reports, included as Appendix D of this Initial Study.

- *Phase I Environmental Site Assessment Update, 24.6 Acres of Land and Street at the Northern Terminus of Peachwood, Lake Forest, California*. HEI Corporation, September 2011.

Existing Plans, Programs, and Policies

The following measure is an existing plan, program, or policy (PPP) that applies to the proposed project and will help to reduce and avoid potential impacts related to hazards:

PPP HAZ-1 (*OSA PEIR MMRP Hazards Standard Condition*) Compliance with applicable federal, state, and local laws regulating generation, handling, transportation and disposal of hazardous materials and waste.

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

No New Impact. The OSA PEIR determined that through compliance with federal, state and local regulations, impacts related to routine transport and use of hazardous materials would be less than significant for all OSA sites. Project construction would involve the use and transport of limited amounts of hazardous materials, such as paints and other coatings; fuels, lubricants, and greases; pesticides and herbicides; and cleaning and maintenance products such as solvents. The use, storage, transport, and disposal of hazardous materials by the project would be required to comply with existing regulations of several agencies, including the Department of Toxic Substances Control (DTSC), the U.S. Environmental Protection Agency (USEPA), the Occupational Safety & Health Administration (OSHA), Orange County Fire Authority (OCFA), and the Orange County Environmental Health Division (EHD).[3] Compliance with applicable laws and regulations governing the use, storage, transportation, and disposal of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner, and would minimize potential hazards. Long-term operations of the proposed project would not involve routine transport, storage, use, and disposal of substantial amounts of hazardous materials.

[3] The Environmental Health Division is the Certified Unified Program Agency (CUPA) for Orange County; the Certified Unified Program coordinates and makes consistent enforcement of several federal and state regulations governing hazardous materials.

Hazardous materials used during project operation would be materials such as cleansers, paints, and pesticides used for cleaning and maintenance purposes, and would be used in small amounts. The use of these materials would be in small quantities and in accordance with the manufacturer's instructions for use, storage, and disposal of such products. Therefore, impacts arising from the routine handling of hazardous materials would be less than significant. The proposed project does not require any changes to the OSA PEIR and there are no new impacts.

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?

No New Impact. The OSA PEIR determined that since no industrial uses were proposed, and through compliance with existing regulations, all the project sites in the OSA would have less than significant impacts related to accidental releases of hazardous materials. Hazardous materials such as fuels, greases, paints, and cleaning materials would be used during project construction. The project applicant would be required to comply with existing local, state, and federal regulations, which would reduce potential impacts arising from accidental releases of hazardous materials. For example, all spills or leakage of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations regarding the cleanup and disposal of the contaminant released. All contaminated waste encountered would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility. Additionally, the proposed project would be constructed and operated with strict adherence to all emergency response plan requirements set forth by the City of Lake Forest and the Orange County Environmental Health Division[4]. Impacts resulting from accidental release of hazardous materials were determined to be less than significant in the OSA PEIR. No new significant impact would occur.

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

No Impact. There are no existing schools within 0.25 mile of the project site (Google Earth 2012). There are no proposed schools. As discussed in Section 3.8a and 3.8b above, the project would not emit or handle acutely hazardous materials. Therefore, there are no impacts.

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?

No Impact. California Government Code Section 65962.5 requires the compiling of lists of the following types of hazardous materials sites: hazardous waste facilities; hazardous waste discharges for which the State Water Quality Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated. No documented hazardous materials sites of any of the types specified in Government Code Section 65962.5 were identified on the project site in a regulatory database search conducted as part of the Phase I Study. A compilation of the Federal, State, Regional, County and Tribal databases searched are included in Appendix A of the Phase I Study. The property was not posted on any of the databases (HEI

[4] The Orange County Environmental Health Division is the Certified Unified Program Agency (CUPA) for the County of Orange, including the City of Lake Forest; the Certified Unified Program coordinates and makes consistent enforcement of several federal and state regulations governing hazardous materials.

2011). None of the adjoining properties were in the databases. Therefore, there are no impacts. No risk related to listed hazardous materials sites would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The OSA PEIR found no impacts because none of the sites were within 2 miles of any airports. There are still no public-use airports within two miles of the project site (Airnav.com 2012), and the site is not in an airport land use plan. The project site was formerly under or near a flight path to or from MCAS El Toro; that facility closed in 1999, and the County of Orange Airport Land Use Commission extinguished the Airport Environs Land Use Plan (AELUP) for MCAS El Toro in 2005. The nearest public-use airport to the site is John Wayne Airport, roughly 10 miles west of the site. No impacts would occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The OSA PEIR found no impacts because none of the sites were within 2 miles of any airports. The nearest heliport is the Saddleback Memorial Medical Center Heliport, approximately 3.5 miles south of the site (Airnav 2012). Except during takeoff and landing, helicopters over congested areas are required to maintain a minimum altitude of 1,000 feet above the highest obstacle (Code of Federal Regulations, Title 14). Project development would not cause a hazard involving helicopters, and no impacts would occur.

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

No New Impact. Impacts on the City of Lake Forest's Emergency Preparedness Plan are identified in the OSA PEIR as less than significant after implementation of Mitigation Measure HAZ MM-3 (OSA PEIR MM 3.7-4), which requires modification of the Emergency Preparedness Plan and available emergency response resources, as required, to accommodate development. In addition Mitigation Measures HAZ-2 and HAZ-4 (OSA PEIR MM 3.7-3 and 3.7-5) address lane closures related to construction activities and fire hazards and are also incorporated into the proposed project. No new significant impact would occur.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed project.

HAZ MM-2 (*OSA PEIR MMRP Mitigation Measure 3.7-3*). Lane Closures - At least three business days prior to any lane closure, the construction contractor shall notify the OCSD and OCFA, of construction activities that would impede movement (such as road or lane closures) along roadways immediately adjacent to the Project Area, and obtain an encroachment permit from the Public Works Department, to allow for uninterrupted emergency access and maintenance of evacuation routes.

HAZ MM-3 (*OSA PEIR MMRP Mitigation Measure 3.7-4*).Prior to issuance of building permits ~~for any development within the Project Area~~, the City shall modify, to the extent necessary, the City's

emergency response protocol and available emergency response resources, as outlined in the Emergency Preparedness Plan, to accommodate development. Such modifications shall ensure that the existing level of emergency service is maintained.

HAZ MM-4 (*OSA PEIR MMRP Mitigation Measure 3.7-5*). The City will reduce the potential for dangerous fires by implementing fire hazard education, fire protection, and fuel modification programs in coordination with the Orange County Fire Authority (OCFA). In addition, all development located within portions of the Project Area that are designated as a VHFSHZ/~~SFPA~~ by ~~OCFA~~ **California Department of Fire and Forestry (CalFire)** shall comply with OCFA VHFSHZ~~/SFPA~~ guidelines. Site developer(s) shall be responsible for providing evidence to the City and the OCFA prior to the issuance of grading permits that water pressure is adequate for fire-fighting purposes.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No New Impact. Wildfire hazard impacts were assessed in the OSA PEIR as less than significant after implementation of Mitigation Measures 3.7-5, 3.12-1, and 3.12-2; all of these mitigation measures are incorporated into the proposed project. Mitigation measures 3.12-1 and 3.12-2 are included in Section 3.14, *Public Services*, of this Initial Study. These three mitigation measures include requirements that projects comply with CalFire's Very High Fire Severity Hazard Zone (VHFSHZ) Guidelines; and that projects enter into a Secured Fire Protection Agreement with the OCFA prior to issuance of a grading permit. In compliance with OSA PEIR MM 3.12-1, a Fuel Modification Plan for The Pinnacle at Serrano Highlands was reviewed by the OCFA. The plan was designed to provide maximum safety for the community, particularly the northern edge of the community that has open space interface. The land north of the site will remain generally in its natural condition, subject to the fuel modification plan. Because the native vegetation in southern California is dormant in the summer months, the threat of wildland fires increases during the hot months of the year.

Generally, fire safety is achieved through separation from natural open space. However, other techniques may be used to achieve the same result, based on a technical analysis of fire behavior in a given condition. The project employs two fuel modification zones maintained by a homeowners association. Within both of these zones, the type of plant material and its ultimate size is limited to species approved by OCFA. There are no new impacts and impacts would remain less than significant. There are no new impacts.

3.9 HYDROLOGY AND WATER QUALITY

The information and analysis in this Section is based in part on the following reports:

- Water Quality Management Plan (WQMP) for: Tentative Tract No. 15594, City of Lake Forest, County of Orange. Hunsaker and Associates Irvine, Inc. July 27, 2011.

- Preliminary Hydrology Analysis for Serrano Highlands, Tentative Tract 15594, Lake Forest, CA. Hunsaker and Associates Irvine, Inc., August 3, 2011.

The reports are included as Appendix E of this Initial Study.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to water resources:

PPP WR-1 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Hydrology/Water Quality*) Compliance with NPDES, DAMP, Groundwater Management Plan.

PPP WR-2 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Hydrology/Water Quality*) Compliance with Lake Forest Municipal Code and County of Orange Codes regulating drainage and water quality.

PPP WR-3 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Hydrology/Water Quality*) Compliance, where necessary with FEMA regulations for Special Flood Hazard Areas.

PPP WR-4 (*OSA PEIR MMRP Drainage/Flood/NPDES Standard Conditions of Approval DFN1*) Prior to the issuance of a grading permit, a complete hydrology and hydraulic study (include off-site areas affecting the development) shall be prepared by a qualified engineer and shall be submitted by the applicant to the Director of Public Works/City Engineer for review and approval. The report shall include detailed drainage studies indicating how the grading, in conjunction with the drainage conveyance systems including applicable swales, channels, street flows, catch basins, storm drains, and flood water retarding, will allow building pads to be safe from inundation from rainfall runoff which may be expected from all storms up to and including the theoretical 100-year flood.

PPP WR-5 (*OSA PEIR MMRP Drainage/Flood/NPDES Standard Conditions of Approval DFN2*) Prior to the issuance of a grading permit, the applicant shall demonstrate to the Building Official that coverage has been obtained under California's General Permit for Storm Water Discharge Associated with Industrial Activity by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) Number to the Building Official. Prior to the issuance of a grading permit, the applicant shall submit to the Building Official for review and approval a Stormwater Pollution Prevention Plan (SWPPP). A copy of the approved SWPPP shall be kept at the project site and available for review upon request.

PPP WR-6 (*OSA PEIR MMRP Drainage/Flood/NPDES Standard Conditions of Approval DFN3*) Prior to the issuance of a grading permit, the applicant shall prepare a Water Quality Management Plan (WQMP) specifically identifying the Best Management Practices (BMP's) that will be used on site to control predictable pollutant runoff. The plan shall identify the types of structural and non-structural measures to be used. The plan shall comply with the Orange County Drainage Area Management Plan (DAMP). Particular attention should be addressed to the appendix section "Best Management Practices for New Development." The WQMP shall clearly show the locations of structural BMP's, and assignment of long term maintenance responsibilities (which shall also be included in the Maintenance Agreement). The plan shall be prepared to the general form and content shown in the City of Lake Forest's WQMP Template and shall be submitted to the Director of Public Works/City Engineer for review and approval. The DPW/CE shall approve the plan if the Director reasonably determines that the plan is substantially similar in all material respects to the City of Lake Forest's WQMP Template.

PPP WR-7 (*OSA PEIR MMRP Drainage/Flood/NPDES Standard Conditions of Approval DFN4*) Prior to ~~building permit final inspection~~ **building permit final inspection** the applicant shall demonstrate that all structural Best Management Practices (BMP) described in the project's Water Quality Management Plan (WQMP) have been constructed and installed. In addition, the applicant is prepared to implement all non-structural BMP's described in the project's WQMP. Two (2) copies of the WQMP shall be available on-site. Prior to ~~building permit final inspection~~ **building permit final inspection**, all equipment shall be in place and in good working order as indicated in the WQMP.

Project Design Features

The following OSA Project Design Feature (PDF) relates to potential water resources impacts:

PDF WR-1 (*OSA PEIR MMRP Project Design Features for Hydrology/Water Quality*) Subsequent related development projects will include specific project design features for hydrology and water quality developed with project level entitlements.

The proposed project is a subsequent development project (Site 6) and includes project-specific design features as discussed in this section.

The *City of Lake Forest CEQA Significance Thresholds Guide* (March 2009) was utilized as guidance in determining potential impacts to water resources (hydrology and water quality). Would the project:

SURFACE WATER AND FLOODING

The project site is in the Serrano Creek drainage area in the Newport Bay watershed, which is in the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB). The site currently receives run-on from the north and east. Drainage sheet-flows to the south and southwest across the site and is picked up by inlets along Peachwood and Oakville connecting to the existing local facility storm drain line F19P02. Serrano Creek passes about 0.3 mile southeast of the site and flows into San Diego Creek about 3.7 miles southwest of the site; San Diego Creek discharges into Upper Newport Bay.

Findings of the OSA PEIR

The runoff coefficient is an estimate of the percentage of water that falls on an area of land (such as rainwater or irrigation water) that runs off. Development of the project site pursuant to the OSA PEIR would decrease the runoff coefficient of the project site by 31.8 percent compared to existing conditions, but would increase the runoff coefficient by 20 percent compared to general plan buildout of the site. Runoff impacts were found to be less than significant after implementation of mitigation. Impacts to drainage and to watercourses were found to be less than significant after implementation of mitigation and compliance with regulatory requirements.

a) 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?

No New Impact The hydrology study for the proposed project was completed in August 2011. The project site is divided into two drainage areas by the hydrology study. Drainage Area A spans roughly the central and eastern two-thirds of the site, while Drainage Area B is the western third of the site. The

sizes and relative positions of the two drainage areas in post-project conditions would be generally similar to those in existing conditions.

Pre-project Drainage

Currently about 5.6 percent of the project site is impervious. Site runoff is discharged from the site at three locations, all on or near the south site boundary. The first location, in Drainage Area A, discharges through a storm drain inlet to a 30-inch reinforced concrete pipe (RCP) storm drain in Oakville. The second location, in Drainage Area B, is along the east side of Peachwood and discharges through a storm drain inlet to an 18-inch RCP storm drain F19P02 in Peachwood. The third location is located at the southwest corner of the site in Drainage Area B, and discharges to the curb and gutter in Tamarisk Street. The storm drain in Oakville discharges into the storm drain in Peachwood. The hydrology study analyzed a drainage area of 34.35 acres in pre-project conditions including the 24.6-acre project site; about 6.13 acres north of the site; and about 3.62 acres east of the site. Pre-project peak drainage flows from 10-year, 25-year, and 100-year storms, and the acreage of each drainage area, are shown below in Table 3.9-1. See Figure 14, *Existing Hydrology*

Table 3.9-1
Pre-Project Drainage

	Peak flow rates, cubic feet per second (cfs)		
	Drainage Area A 23.6 acres	*Drainage Area B 10.8 acres*	*Total 34.35 acres*
10-year storm	37.4	19.2	56.6
25-year storm	46.2	23.4	69.6
100-year storm	60.6	30.3	90.9

Source: Hunsaker 2011

Drainage in post-project conditions:

The project would develop a network of storm drains onsite. Post-project flow rates would be less than existing rates in drainage area A and more than existing rates in Drainage Area B, as shown below in Table 3.9-2, *Post-Project Drainage*. See also Figure 15, *Proposed Hydrology.* The proposed drainage system would include an approximately 330-foot length of 72-inch-diameter pipe in proposed Street F in the southwestern part of the project site to serve as an underground detention facility to accommodate the increased runoff due to the project. A 12-inch outflow pipe would convey drainage out of the downstream end of the 72-inch pipe.

Table 3.9-2
Pre-Project and Post-Project Drainage Compared

Scenario	Storm Intensity	Peak flow rates, cubic feet per second (cfs)		
		Drainage Area A 21.5 acres	Drainage Area B 12.3 acres	Total 33.8 acres
Proposed	10-year storm	37.0	17.1	54.1
	25-year storm	45.2	20.9	66.1
	100-year storm	59.0	37.6	96.6
Existing	10-year storm	37.4	19.2	56.6
	25-year storm	46.2	23.4	69.6
	100-year storm	60.6	30.3	90.9
Proposed less Existing	10-year storm	-0.4	-2.1	-2.5
	25-year storm	-1.0	-2.5	-3.5
	100-year storm	-1.6	-0.2	-1.8

Source: Hunsaker 2011

As shown above in Table 3.9-2, in post-project conditions with the proposed storm drainage system including the 72-inch detention pipe the total runoff rate from the drainage area including the project site would be reduced by 2.5 cubic feet per second (cfs) in a 10-year storm and 1.8 cfs in a 100-year storm.

The project would not cause flooding onsite or offsite, and impacts would be less than significant. The project was adequately analyzed in the OSA PEIR and the impacts were fully analyzed and/or mitigated in the prior OSA PEIR. The hydrology study satisfies OSA PEIR Mitigation Measure 3.8-5. No new significant impact would occur and no new mitigation is required.

b) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.

No New Impact. The OSA PEIR found impacts to drainage systems and to watercourses to be less than significant after implementation of mitigation and compliance with regulatory requirements. Peak storm drainage flow rates from a 25-year storm, in pre-project and post-project conditions, are described above in Section 3.9.a. Existing and proposed storm drainage systems would have sufficient capacity for peak flow rates from the site in post-project conditions, and impacts would be less than significant. No new significant impact would occur and no new mitigation is required.

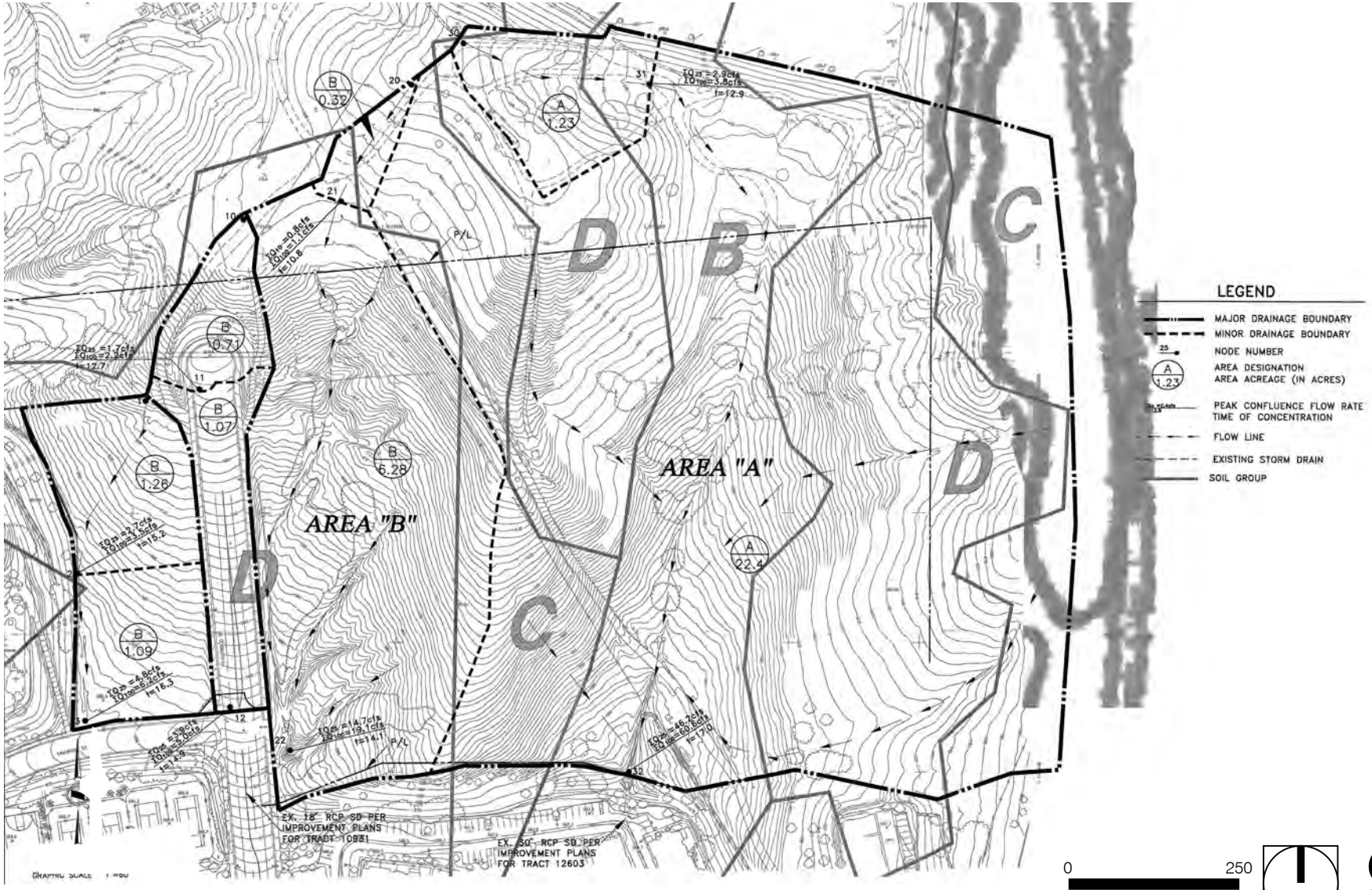
c) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The project site is in Zone X, meaning that it is outside of 100-year and 500-year flood zones mapped by the Federal Emergency Management Agency (FEMA 2009a, FEMA 2009b). The project would not place housing in 100-year flood zones, and no impact would occur.

d) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. The project site is outside of 100-year and 500-year flood zones, and no impact would occur.

Existing Hydrology



Source: Hunsaker & Associates 2011

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Proposed Hydrology

Source: Hunsaker & Associates 2011

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e) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The project site is in the Serrano Creek drainage area. There are no dams upstream of the project site on Serrano Creek, and project development would not result in flood hazards related to dam failure. The project site is not in an area mapped by FEMA as protected from 100-year floods by levees. No impact would occur.

f) Cause inundation by seiche, tsunami, or mudflow?

No New Impact (Seiche, Tsunami, and Mudflow). A seiche is a surface wave created when an inland body of water is shaken, usually by earthquake activity. There are no inland bodies of water close enough to the project site to pose a flood hazard to the site due to a seiche. There are two aboveground water tanks southeast of the site; the nearer of the two is about 370 feet from the site. The tanks are near the top of a drainage that extends southeast away from the site; thus, in the event of release of water from the tanks, water would flow away from the site.

A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. Elevation onsite ranges from about 575 feet to 675 feet above mean sea level (amsl), and the site is approximately 11 miles inland from the Pacific Ocean; thus, the site is not at risk of flooding due to a tsunami.

A mudflow is a landslide composed of saturated rock debris and soil with a consistency of wet cement. Much of the project site, as well as much of the balance of the drainage area containing the site, is natural slopes on which mudflows could occur. At project completion the site would be developed with buildings, roadways, other paved areas such as driveways and parking lots, and landscaped areas. At project completion the greatest difference between elevations of building lots onsite would be about 20 feet, compared to the 100-foot difference in elevation onsite currently. At project completion there would be no mudflow hazard either to the project site or from the project site to surrounding areas. No new impacts would occur.

g) Deposit sediment and debris materials within existing channels obstructing flows

No New Impact. The project would involve approximately 210,000 cubic yards (CY) of grading; thus, erosion and sedimentation could occur during project grading and construction activities. Pursuant to existing PPPs, the project would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) specifying Best Management Practices (BMPs) to be used to minimize pollution of stormwater from project construction, including pollution with sediment and debris. Such BMPs are described further below in Section 3.9.m. Implementation of BMPs would reduce the amount of sediment carried from the project site to channels; the project would not cause obstructions to flows in existing channels. Impacts would be less than significant, and no new significant impacts would occur.

h) Exceed the capacity of a channel and cause overflow during design storm conditions.

No New Impact. Impacts to storm drainage flows and storm drainage capacity are discussed above in Section 3.9.a. The project includes a proposed storm drainage system with sufficient capacity for estimated storm drainage from the site in post-project conditions, and impacts would be less than significant. The proposed 85 unit single-family project was adequately addressed in the OSA PEIR and the impacts were fully analyzed and/or mitigated in the prior OSA PEIR. No new impacts would occur.

GROUNDWATER

i) 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)?

No New Impact.

The project is underlain by sandstone bedrock, and is not above a groundwater basin. Groundwater was not found in borings onsite at depths of up to 41.5 feet below ground surface (CGS 2011). Depth of grading is estimated at 2 feet to 35 feet. The OSA PEIR determined that with compliance with existing regulations, the proposed project would not cause or contribute to depletion or degradation of groundwater resources.

Groundwater Use

The project would not involve groundwater wells. The Irvine Ranch Water District (IRWD) would provide water to the project; IRWD supplies water to most of the City of Lake Forest and all of the City of Irvine. Currently, approximately 50 percent of IRWD's potable water supply comes from imported water purchased from the Metropolitan Water District of Southern California (MWD). The balance of IRWD's potable supplies come from locally-developed groundwater, from the Orange County Main Groundwater Basin (OCMGWB) including the Irvine Sub-basin of the OCMGWB. IRWD obtains nonpotable water from four sources: recycled water from IRWD wastewater treatment plants; untreated MWD water; surface water; and non-potable groundwater.

A water supply assessment (WSA) was prepared for the OSA PEIR by the IRWD in 2005. Water supply impacts were found to be less than significant in the OSA PEIR. As discussed in Section 3.17d, the 2010 Urban Water Management Plan indicates that IRWD's supplies remain constant in normal, single-dry and multiple-dry years through 2035. (IRWD UWMP, Table 35) Therefore, no new impacts to water supplies are expected to occur that would deplete groundwater supplies as a result of the proposed project. There are no new impacts.

Groundwater Recharge

At project completion 45 percent of the project site would consist of pervious surfaces where stormwater could percolate into soil. Drainage from the site would be discharged to two existing storm drains, one in Peachwood and one in Oakville. The storm drain in Oakville discharges into the storm drain in Peachwood downstream of the site; the latter storm drain discharges to a natural drainage, where additional infiltration into soil could occur, about 0.3 mile southwest of the site (OCFCD 2007). Impacts to groundwater were identified as less than significant in the OSA PEIR. The project site is not above a groundwater basin. However, as discussed in the OSA PEIR, the IRWD, Orange County Water District and member agencies aggressively manage groundwater resources to minimize impacts. These agencies use recycled water, imported water for groundwater storage, spreading grounds for groundwater recharge, injection wells, and conduct monitoring and research programs to further manage groundwater resources. Additionally, existing NPDES stormwater regulations (e.g., construction activities, post construction BMPs, and others) would prevent direct contamination and degradation of groundwater resources. City development codes are consistent with existing groundwater management plans. As explained in the OSA PEIR, the proposed project does not propose new wells and no

significant impact on groundwater recharge or recharge potential would occur. Impacts remain less than significant and no new impact to groundwater recharge is anticipated.

j) Adversely change the rate, direction, or flow of groundwater

No New Impact. The project site is underlain by sandstone bedrock and is not above a groundwater basin. Project development would not adversely affect the direction or flow rate of groundwater. No new significant impact would occur compared to impacts identified in the OSA PEIR.

k) Have an impact on groundwater that is inconsistent with a groundwater management plan prepared by the water agencies with the responsibility for groundwater management.

No Impact. The project site is not above a groundwater basin mapped by either the California Department of Water Resources or the Metropolitan Water District of Southern California (DWR 2003; MWD 2007). The nearest groundwater basins to the project site are the Irvine Subbasin of the Orange County Groundwater Basin, west of the site, and the San Juan Groundwater Basin southeast of the site. The project site is within IRWD's district boundaries; however, IRWD does not have authority for groundwater management. Groundwater under surrounding areas is subject to regulation by the Santa Ana Regional Water Quality Control Board (SARWQCB), but is not otherwise subject to a groundwater management plan. No impact would occur.

WATER QUALITY

Findings of the OSA PEIR

San Diego Creek is listed on the Clean Water Act Section 303(d) List of Water-Quality Limited Segments as impaired by nutrients (nitrogen and phosphorous), sediment, and toxics (pesticides and metals in water and sediment). The OSA projects would discharge to Serrano Creek and Borrego Wash, tributaries to San Diego Creek. Water quality impacts related to sediment, metals, and nutrients were found to be less than significant. Total Maximum Daily Loads (TMDLs, that is, maximum concentrations of pollutants that are allowed to occur in surface waters) have been established for San Diego Creek for nitrogen, phosphorous, sediment, and for two pesticides, chlorpyrifos and diazinon – both of which are organophosphate insecticides. The TMDL for chlorpyrifos in San Diego Creek prohibits acute concentrations above 18 ng/L[5], and chronic concentrations above 12.6 ng/L. The TMDL for diazinon prohibits acute concentrations above 72 ng/L and chronic concentrations above 45 ng/L. Water quality impacts related to pesticides were found to be significant and unavoidable in the OSA PEIR.

l) Violate any water quality standards or waste discharge requirements?

No New Impact.

Construction Phase

Discharges into stormwater by the project during the construction phase would be regulated by the General Construction Permit, State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ. The General Construction Permit requires the project to prepare and implement a SWPPP specifying Best Management Practices (BMPs) that the project would use to minimize contamination of stormwater. BMPs that would be specified in the SWPPP and incorporated into the construction phase of

[5] ng/L is nanograms per liter; one nanogram is one billionth part of one gram. Acute concentrations of a pollutant rapidly induce an effect; in aquatic toxicity tests, an effect observed within 96 hours is considered an acute effect (USEPA 2011).

the project are described further below in Section 3.9m. Impacts would be less than significant and there are no new impacts requiring new mitigation.

Operations Phase

The project would develop the site with residential and open space uses, and roadways. Project operation could introduce substantial amounts of water pollutants into the Serrano Creek watershed. A Water Quality Management Plan (WQMP) has been prepared for the project pursuant to SARWQCB Order No. R8-2009-0030 issued in 2009, regulating urban storm water runoff in the part of Orange County in the jurisdiction of the SARWQCB. BMPs specified in the WQMP, and which would be implemented during project design and project operation pursuant to existing PPPs, are described below in Section 3.9m. The approved WQMP satisfies OSA PEIR Mitigation Measures 3.8-1 and 3.8-4 (WQ MM-2 and WQ MM-5 herein). There are no new impacts.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR:

WQ MM-2 (*OSA PEIR MMRP Mitigation Measures for Hydrology/Water Quality MM 3.8-1*) Prior to approval of a Parcel Map or a Tentative Tract Map (whichever comes first), the applicant shall submit a Water Quality Management Plan (WQMP), including a hydrology study, if appropriate, for review and approval of the City Engineer. The Plan shall include Best Management Practices (BMPs) in accordance with the latest City of Lake Forest Water Quality Management Plan Template User Guide and include stormwater detention/retention features, if necessary, to mitigate impacts of changes in stormwater rates or volumes as identified in the site-specific hydrology study. (*Satisfied with: Water Quality Management Plan (WQMP) for: Tentative Tract No. 15594, City of Lake Forest, County of Orange. Hunsaker and Associates Irvine, Inc. July 27, 2011.)*

WQ MM-3 (*OSA PEIR MMRP Mitigation Measures for Hydrology/Water Quality MM 3.8-2*) All City landscape contractors and project developers shall be required, as part of their contract, to submit to the City a landscape design plan including the following elements:

- Maximized use of native plant species with minimum water and fertilizer requirements
- Watering shall be kept to the minimum necessary to maintain new landscaping
- Drip irrigation shall be used only until the native landscaping is established
- Minimal use of fertilizers and pesticides

WQ MM-4 (*OSA PEIR MMRP Mitigation Measures for Hydrology/Water Quality MM 3.8-3*) Prior to the issuance of a grading permit, the applicant shall be required to join the Nitrogen and Selenium Working Group in order to establish eligibility for the de minimus permit implemented by the Santa Ana Region of the RWQCB.

WQ MM-5 (*OSA PEIR MMRP Mitigation Measures for Hydrology/Water Quality MM 3.8-4*) Prior to the issuance of a grading permit, the applicant shall develop and implement appropriate Best Management Practices, such as a nutrient management program, to reduce the amount of

nutrients entering the watershed (see San Luis Rey Watershed Urban Runoff Management Program http://www.projectcleanwater.org/html/wurmp_san_luis_rey.html) for an example of a management program that addresses nutrients). In addition, a pesticide management program shall be developed to reduce the amounts of pesticides entering the watershed through minimizing the use of pesticides and emphasizing s non-chemical controls (see the City of San Francisco's Integrated Pest Management Program (http://www.sfgov.org/site/frame.asp?u=http://www.sfwater.org/) for an example). These plans shall be approved by the City prior to issuance of a grading permit. (*Satisfied with: Water Quality Management Plan (WQMP) for: Tentative Tract No. 15594, City of Lake Forest, County of Orange. Hunsaker and Associates Irvine, Inc. July 27, 2011.*)

m) Cause a significant alteration of receiving water quality during or following construction

No New Impact.

Beneficial Uses of Waters

Beneficial uses are the ways that water can be used for the benefit of people and/or wildlife. Rivers and streams are divided into segments, or "reaches," for the purposes of designating beneficial uses and listing pollutants impacting those water bodies. The beneficial uses of San Diego Creek Reach 2, upstream from Jeffrey Road, are groundwater recharge, recreation, warm water habitat, and wildlife habitat. Recreational uses include body-contact uses such as swimming and wading, and non-body-contact uses such as sightseeing and picnicking.

Existing Surface Water Quality Impairments

San Diego Creek Reach 2, that is, above Jeffrey Road, is listed on the 2007 Section 303(d) list for metals. San Diego Creek Reach 1, below Jeffrey Road, is listed for fecal coliform bacteria from urban runoff; selenium (source unknown); and toxaphene, an insecticide (source unknown). San Diego Creek discharges into Upper Newport Bay, which is listed for chlordane (source unknown), copper (source unknown), DDT (source unknown), metals from urban runoff, PCBs (source unknown), and sediment toxicity (source unknown). Chlordane and DDT are organochlorine insecticides. PCBs are polychlorinated biphenyls, a class of organic compounds that was formerly used as coolants in electrical equipment. Chlordane, toxaphene, DDT, and PCBs have all been banned due to toxicity to humans and/or animals.

Construction Impacts

The project would involve approximately 210,000 CY of grading. Thus, the project could result in substantial erosion and sedimentation during site grading and project construction if effective erosion-control measures were not used. The project would prepare and implement a SWPPP specifying BMPs for minimizing water pollution from project construction, including pollution with sediment. Other water pollutants that could result from project construction include oil and grease, metals, trash and debris, nutrients (such as from fertilizers), and organic compounds (such as solvents).

Categories of BMPs included in SWPPPs are described in Table 3.9-3 below.

Table 3.9-3
Construction BMPs

Category	Purpose	Examples
Erosion Controls	Cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind	Mulch, geotextiles, mats, hydroseeding, earth dikes, swales
Sediment Controls	Filter out soil particles that have been detached and transported in water.	Barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basin; cleaning measures such as street sweeping
Wind Erosion Controls	The aims and methods of wind erosion control are similar to those of erosion control described above.	See Erosion Controls above.
Tracking Controls	Minimize the tracking of soil offsite by vehicles	Stabilized construction roadways and construction entrances/exits; entrance/outlet tire wash.
NonStorm Water Management Controls	Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Conduct various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize non-stormwater discharges and contamination of any such discharges.	BMPs specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; concrete curing; concrete finishing.
Waste Management and Controls (i.e., good housekeeping practices)	Management of materials and wastes to avoid contamination of stormwater.	Spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes.

Implementation of construction BMPs identified in the project SWPPP would reduce construction impacts to water pollution to less than significant. No new impacts would occur.

Operational Impacts

Potential Pollutants

- *Bacteria and Viruses (Pathogens).* Bacteria and viruses are microorganisms that thrive under certain environmental conditions. Water contamination by animal or human fecal wastes and contamination by excess organic wastes are common causes of proliferation of these microorganisms. Water containing excessive bacteria and viruses can alter the aquatic habitat and harm humans and aquatic life.

- *Metals*. Metals of concern as water contaminants include cadmium, chromium, copper, lead, mercury, and zinc. Lead and chromium have been used as corrosion inhibitors; metals are also raw materials used in nonmetal products such as fuels, adhesives, and paints. At low concentrations naturally occurring in soil, metals may not be toxic. However, certain metals at higher concentrations can be harmful to aquatic life and to humans. Humans can be impacted from groundwater contaminated with metals. Metals can become concentrated in fish and shellfish, and can subsequently harm humans who consume those animals. Environmental concerns have already led to restrictions on some uses of metals.

- *Nutrients.* Nutrients are inorganic substances such as nitrogen and phosphorous; the primary sources of these substances in urban runoff are fertilizers and eroded soils. Excessive discharge of nutrients to water bodies and streams causes overgrowth of aquatic plants and algae, which can lead to excessive decay of organic matter in the water, loss of oxygen in the water, and eventual death of aquatic organisms.

- *Pesticides.* Relatively low concentrations of the active ingredients in pesticides can be toxic in water. Excessive or improper use of pesticides can cause toxic contamination in runoff.

- *Organic Compounds.* Organic compounds are carbon based. Commercially available or naturally occurring organic compounds are found in pesticides, solvents, and hydrocarbons. Organic compounds at certain concentrations can be hazardous to life or health. Toxic levels of solvents and cleaning compounds can be discharged to storm drains during cleaning and rinsing operations.

- *Sediments*. Sediments are solid materials that are eroded from the land surface. Sediments can increase the turbidity (cloudiness) of water, clog fish gills, reduce spawning habitat, lower survival rates of young aquatic organisms, smother bottom-dwelling organisms, and suppress aquatic vegetation growth.

- *Trash and Debris.* Trash and debris, such as paper, plastic, polystyrene foam, aluminum, and biodegradable organic matter such as leaves, grass cuttings, and food waste, may significantly impair aquatic habitat and the recreational value of a water body. In addition, trash impacts water quality by increasing biochemical oxygen demand.

- *Oxygen-Demanding Substances.* Microbial biodegradation of organic compounds such as proteins, carbohydrates, and fats causes increased oxygen demand in water. A second category of oxygen-demanding substances is chemicals, such as ammonia and hydrogen sulfide, which react with dissolved oxygen in water to form other compounds. The oxygen demand of a substance can deplete dissolved oxygen in a water body and thus can lead to septic conditions. A reduction of dissolved oxygen is harmful to aquatic life and can generate hazardous compounds such as hydrogen sulfides.

- *Oil and Grease.* Oil and grease in water bodies decrease their aesthetic value as well as water quality; one of the most important sources of oil and grease is leakage from motor vehicles.

Pollutants of Concern

Pollutants of concern are those which are expected to be generated by the proposed project, and are grouped in two categories:

- Primary pollutants of concern, those which have also been identified as causing impairment of receiving waters, that is, San Diego Creek and Upper Newport Bay. Primary pollutants of concern for the project are bacteria and viruses, sediment, and pesticides.

- Secondary pollutants of concern, those not identified as causing impairment of receiving waters. Secondary pollutants of concern for the project are nutrients, trash and debris, oxygen-demanding substances, and oil and grease.

Best Management Practices

The project has prepared and would implement a WQMP, based on the project Preliminary WQMP, specifying BMPs that would be implemented during project design and project operation to avoid or reduce stormwater pollution from project operation.

Site design for stormwater quality protection uses a three-level strategy:

1. Reduce or eliminate post-project runoff;
2. Control sources of pollutants; and, if still needed after (1) and (2),
3. Treat contaminated stormwater before discharging it into the storm drain system or into receiving waters.

There are three categories of BMPs, with each category corresponding to one of the three strategies: site design BMPs, source control BMPs, and treatment control BMPs. Source control BMPs are classified further into structural source control BMPs incorporated into the project design, and nonstructural source control BMPs used in project operation.

Site design and structural source control BMPs are described below in Table 3.9-4; nonstructural source control BMPs in Table 3.9-5 and treatment control BMPs in Table 3.9-6.

Table 3.9-4
Site Design and Structural Source Control BMPs

BMP	Description
Site Design BMPs	
Site Design Concept 1: Minimize Stormwater Runoff, Minimize Project's Impervious Footprint And Conserve Natural Areas	
1. Minimize impervious footprint	Site design is comprised of 2-story and 3-story structures, reducing building footprint and impervious space and increasing the amount of buffer strips.
2. Conservation of natural areas	The project proposes approximately 15.5 acres of Open Space, by Zoning and Land Use designation. This would be located mostly along the northern edge of the site.
3. Use of permeable paving or other surfaces	Use of permeable paving materials would be considered by the project architect or landscape architect. The project is at the Tentative Tract Map stage and as such, use of permeable paving is unknown.This information would either be amended to this WQMP or included in a Final WQMP.
4. Designing to minimum widths necessary; and 6. Reduced Street Widths	Streets, sidewalks and parking lot aisles would be designed to the minimum widths necessary specified in the City of Lake Forest Municipal Code § 7.08.055 (Street Widths), while complying with ADA regulations and other life safety requirements. Generally, project streets have been designed to the minimum width specified for private streets serving four or less parcels with a minimum pavement width of twenty-eight feet.
5. Incorporation of landscaped buffers.	Landscaped buffers are incorporated throughout the project and as part of the Utility Easement. Additionally, landscape slopes are proposed between residential lots at various locations throughout the site; between residential lots and natural open space areas and between residential lots and the project's site boundary.
7. Maximize canopy interception.	Existing native landscape would be conserved in portions of the site. The project is at the Tentative Tract Map stage. The type of neighborhood canopy tree plantings are identified in the conceptual landscape plan but are not yet approved. Use of canopy trees has been considered by the landscape architect. Once approved, this information would either be amended to the WQMP or included in a Final WQMP.

Table 3.9-4
Site Design and Structural Source Control BMPs

BMP	Description
8. Use of native or drought tolerant trees/shrubs.	Existing native landscape would be conserved in portions of the site. Project is at the Tentative Tract Map stage and as such, the planting materials are identified in the conceptual landscape plan but are not yet approved. Use of native/drought tolerant plants has been considered by the project architect or landscape architect. Once approved, this information would either be amended to the WQMP or included in a Final WQMP.
9. Minimizing impervious surfaces in landscaping.	Use of impervious surfaces and decorative concrete in landscaped areas would be avoided wherever appropriate.
10. Use of natural drainage systems.	Natural drainages would be incorporated throughout the open space and along the utility easement. Other onsite drainage would be allowed to flow over landscaped areas prior to entering area drains and the project storm drain system.
11. Low flow infiltration.	There are no low-flow infiltration systems proposed for the project. Per Geosoils, Inc. letter dated July 19, 2011, their report provides recommendations against installing infiltration devices on the subject site; and recommends avoiding ponding of water and overly wet conditions. Infiltration is also being avoided to reduce the risk of contaminating ground water due to common pollutants from urban runoff including nitrates, detergents and common chemicals for yard maintenance. Due to the geometry of this hillside subdivision; considering the front property lines, driveway pattern, sidewalks and narrow parkways, there is no room for a "bio-swale" type facility, or large landscape areas for infiltration. Any infiltration facility would be placed in the natural areas adjacent to structures. As stated in the 2003 DAMP the structural properties of the soil may be reduced and compromise the stability of slopes and subsurface soils. This condition must be avoided, another reason no infiltration facilities are proposed.
12. Onsite ponding areas or retention facilities.	The project would include an oversized underground storm drain pipe for stormwater detention.
13. Other site design features:	Katchall Inserts are proposed in catch basins to treat for project pollutants of concern.
Site Design Concept 2: Minimize Directly Connected Impervious Areas	
1. Draining rooftops into adjacent landscaping.	The project soils report recommends that downspouts should outlet a minimum of 5 feet from structures or to a subsurface drainage system [compliance with recommendations of the soils report is required]. Roof drains would be attached to an area drain system prior to flowing to the project's treatment BMPs.
2. Draining to adjacent landscaping.	Impervious sidewalks, walkways, trails, and patios would drain into adjacent landscaping prior to entering area drains and the project storm drain system where feasible.
5. Residential driveways.	Driveways incorporating shared access include those residences off of "E" Street between lots 21-23, 26 and 27 as common access ways. Other driveways would drain flows to the street's catch basins that would include Katchall filtration units.
6. Residential parking areas.	Residential parking would be in closed private garages and would not come in contact with stormwater. Permeable pavement would not be used in these areas. Total project parking spaces shall be consistent with City of Lake Forest's parking regulations, standards and requirements. All onsite streets are private and would be maintained by the homeowners' association (HOA).
7. Non-residential parking areas.	Non-residential parking would be provided throughout the site along "A", "B", "0", "E", "F", "G" "H" and "I" streets.

Table 3.9-4
Site Design and Structural Source Control BMPs

BMP	Description
Structural Source Control BMPs	
Site Design and Landscape Planning.	Landscape planning methods, such as minimizing impervious footprint, incorporation of landscaped buffers and use of native and drought tolerant species, are included in the project design to maximize water storage and infiltration and minimize surface and groundwater contamination from stormwater.
Roof Runoff Controls.	Direct roof runoff away from paved areas and to pervious areas, cisterns, infiltration trenches, and/or storage areas for reuse to reduce total volume and rate of site runoff and retain pollutant on site. Rooftops would not flow directly to landscaped areas to avoid the potential for erosion and foundation problems that can result for medium to highly expansive soils. Roof drains would be attached to area drain system prior to flowing to the project's treatment BMP.
Efficient Irrigation.	Project plans include application methods to minimize irrigation water discharged into stormwater drainage systems. Efficient irrigation practices would be consistent with the City of Lake Forest Municipal Code § 9.144.060.2 (Landscaping) and Chapter 15.10 (Stormwater and Urban Runoff Pollution Controls). Irrigation systems shall be automatically controlled and designed, installed, and maintained so as to minimize overspray and runoff onto streets, sidewalks, driveways, structures, windows, walls, and fences. Provisions such as water sensors, programmable irrigation times (for short cycles) etc. would be used. These devices would be maintained by the HOA.
Storm Drain System Signs.	Stencils or affixed signs stating “No Dumping – Drains to Ocean”, or other words to that effect, would be placed adjacent to storm drain inlets to prevent waste dumping at storm drain inlets.
Trash Enclosures.	Trash storage areas are covered and enclosed to prevent introduction of trash and debris to site runoff. Residents of residential dwelling units would store trash in covered trash containers. Trash enclosures are not proposed for this project. This would be specified and enforceable through the HOA via provisions in the Codes, Covenants, and Restrictions (CC&Rs). Lake Forest residents typically use a 3 cart system for recyclables, trash, and green waste. Trash would be removed weekly by the local private solid waste management contractor.

Table 3.9-5
Nonstructural Source Control BMPs

BMP	Description
Education for Property Owners, Tenants and Occupants.	Practical informational materials and/or training are provided to residents, occupants, or tenants to increase the public's understanding of stormwater quality, sources of pollutants, and their responsibility to reduce pollutants in stormwater.
Activity Restrictions.	Rules or guidelines for developments are established within appropriate documents (i.e. Codes, Covenants, and Restrictions (CC&Rs), lease terms, etc.) which prohibit activities that can result in discharges of pollutants. Examples of activity restrictions are prohibitions of discharges of specified chemical wastes to gutters, catch basins, and storm drains; and use of pesticides and fertilizers consistent with the County Management Guidelines for Use of Fertilizers and Pesticides.
Common Area Landscape Management.	Specific practices are followed and ongoing maintenance is conducted to minimize erosion and over-irrigation, conserve water, and reduce pesticide and fertilizer applications. Common area landscape maintenance by the HOA would include an Integrated Pest Management (IPM) program.
BMP Maintenance.	In order to ensure adequate and comprehensive BMP implementation, all responsible parties are identified for implementing all nonstructural BMPs and for structural BMPs, cleaning, inspection, and other maintenance activities are specified including responsible parties for conducting such activities. Section 8 of the WQMP specifies maintenance and inspection procedures, the frequency of required inspections and maintenance, and parties responsible for maintenance.
Local Water Quality Permit Compliance.	The project complies with water quality permits issued by the City to ensure clean stormwater discharges.
Common Area Litter Control.	Trash management and litter control procedures are specified, including responsible parties, and implemented to reduce pollution of drainage water.
Employee Training.	Practical informational materials and/or training are provided to employees to increase their understanding of stormwater quality, sources of pollutants, and their responsibility for reducing pollutants in stormwater. Post construction, an employee training/education program would be established to inform and train employees engaged in maintenance activities regarding the impact of dumping oil, paints, solvents or other potentially harmful chemicals into storm drains; the proper use of fertilizers and pesticides in landscaping maintenance practices; and the impacts of littering and improper water disposal.
Drainage Facility Inspection.	Inspection procedures, schedules, and responsibilities are established to ensure regular cleaning, inspection, and maintenance of drainage facilities. All project drainage facilities would be owned, inspected and maintained by the HOA. Area drains would be inspected on a weekly basis in conjunction with landscape maintenance operations and maintained as necessary. Catch basin maintenance would consist of manual and/or vacuum removal of silt and debris from the bottom of the basins and the entrance of the storm drain. This would be done at minimum on a yearly basis, and prior to the storm season, no later than October 1st of each year. The modular wetlands system would be inspected a minimum of once every six months, per the manufacturer's guidelines.
Street Sweeping Private Streets and Parking Lots.	Street sweeping frequency and responsible parties are identified and regular sweeping is conducted to reduce pollution of drainage water. During construction and prior to the acceptance of the project streets for maintenance by the HOA, the project developer will have all streets and any parking areas vacuum swept on a weekly basis. This procedure will be intensified around October 1st of each year prior to the "first flush" storm. After acceptance of all streets for maintenance as described herein, above, the HOA shall be responsible for street sweeping.

Table 3.9-6
Treatment Control BMPs

BMP	Description
Bioretention.	A soil and plant based filtration strategy that involves capturing stormwater in depressed landscaped areas. Bioretention practices are flexible strategies for using landscaping as treatment. Proposed for project as part of the modular wetlands system (MWS) self-contained treatment train.
Media Filter.	Self-contained filtering vaults, units, or cartridges. Proposed for project as part of the MWS self-contained treatment train.
Multiple Systems	A system that uses two or more BMPs in series to increase treatment. Useful when one BMP does not provide sufficient treatment alone. The project would use a Modular Wetland System- Linear which is a self contained treatment train with four treatment stages.

The project would incorporate a total of nine individual Modular Wetlands System (MWS) - Linear treatment control BMPs to provide a degree of treatment for the project's pollutants of concern. The MWS-Linear system is a complete self-contained treatment train that incorporates capture, screening, sedimentation, filtration, bioretention, high flow bypass and a flow control into a single modular structure. MWS systems would be installed next to storm drain catch basins adjacent to the two discharge points in Peachwood and Oakville, respectively.

Sediments, a primary pollutant of concern, are captured in the first stage of the treatment train through Bioclean catch basin filters, then separated out in the second stage of treatment, after which a BioMediaGREEN engineered filter media provides the third stage of treatment for sediment. Bacteria and sediment, as primary pollutants of concern, and Oxygen Demanding Substances will be addressed through the use of nine MWSs.

Where treatment effectiveness is unknown, such as with non-soil-bound pesticides, it is expected that project Routine Source Control BMPs and good housekeeping measures should reduce or eliminate the potential effects of this project on downstream waters.

The project would implement the BMPs identified above. With implementation of existing PPPs, project water quality impacts would be less than significant. No new significant water quality impacts would occur and no new mitigation measures are required.

n) Substantially degrade groundwater quality

No New Impact. The project is underlain by sandstone bedrock, and is not above a groundwater basin. Groundwater was not found in borings onsite at depths of up to 41.5 feet below ground surface. Project site grading is not expected to encounter groundwater. Implementation of the BMPs identified above in Section 3.9 m would reduce water quality impacts to groundwater to less than significant. No new significant impacts would occur and no new mitigation measures are required.

o) 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.

No New Impact. At project completion runoff from the project site would exit the site from two of the same discharge points as occurs at present – that is, to storm drain catch basins in Peachwood and

Oakville. Drainage that currently runs off the site at the discharge point at the southwest corner of the site would be redirected to Peachwood in post-project conditions; drainage for 2.35 acres, or about 10 percent of the project site, would be affected by that change in drainage pattern.

Implementation of BMPs by the construction phase of the project, which would be specified in a SWPPP, would reduce erosion or siltation resulting from project construction to less than significant. At project completion, the great majority of the site would be developed with buildings; paved areas including roadways, driveways, and walkways; and landscaped areas. The remainder of the site would be open space planted with types of vegetation native to the region. Therefore, during project operation there would be no areas of bare soil left on the site that would be susceptible to substantial erosion. Impacts would remain less than significant consistent with the analysis of the OSA PEIR. There are no new impacts.

p) Create or contribute runoff water which would generate provide substantial additional sources of polluted runoff?

No New Impact. Project water quality impacts are addressed above in Section 3.9m. Impacts would remain less than significant, and no new significant impacts would occur.

q) Substantially degrade water quality by discharge which affects the beneficial uses (i.e. swimming, fishing, etc.) of the receiving or downstream waters?

No New Impact. Beneficial uses are the ways that water can be used for the benefit of people and/or wildlife. The beneficial uses of San Diego Creek Reach 2, upstream from Jeffrey Road, are groundwater recharge, recreation, warm water habitat, and wildlife habitat. Recreational uses include body-contact uses such as swimming and wading, and non-body-contact uses such as sightseeing and picnicking.

Implementation of BMPs described in Section 3.9.m above would reduce amounts of water pollutants from the project that would reach receiving waters. At project completion drainage from nearly the whole project site would be discharged into proposed modular wetland systems in storm drain inlets. Drainage from remaining areas onsite would be treated via surface landscape filtration in and next to the utility easement. The project would not have significant impacts on beneficial uses of receiving waters. Impacts would be less than significant, and no additional significant impacts would occur. The project is consistent with the Site 6 project analyzed in the OSA PEIR. No new impacts would occur.

r) Increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list.

No New Impact. Lists of water bodies not meeting water quality standards set for them are developed by states pursuant to Section 303(d) of the federal Clean Water Act. Serrano Creek is not listed on the 2007 303(d) list as an impaired water body. However, Serrano Creek is tributary to San Diego Creek, which in turn discharges into Upper Newport Bay. Section 303(d) listings of water quality impairments for San Diego Creek and Upper Newport Bay are listed above in Section 3.9.m. The OSA PEIR found water quality impacts to San Diego Creek and Aliso Creek associated with sediment, metals, and nutrients would be less than significant with incorporation of mitigation measures. However, water quality impacts related to pesticide use would be significant and unavoidable. The project would implement BMPs described above in Section 3.9.m, and would not increase concentrations of pollutants for which San Diego Creek and Upper Newport Bay are included on the 303(d) list. Impacts would be less than significant, and no new significant impacts would occur.

3.10 LAND USE AND PLANNING

Existing Plans, Programs, and Policies

The following measure is an existing plan, program, or policy (PPPs) that applies to the proposed project and will help to reduce and avoid potential impacts related to land use:

PPP LU-1 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Planning*) Compliance with Lake Forest Municipal Code, including Zoning, Planned Community Text(s) as appropriate, Lake Forest General Plan policies, and the California Building Code.

a) Physically divide an established community?

No New Impact. The project site is immediately adjacent to open space and the Pacific Vista Business Center office park to the north, an undeveloped property owned by the Irvine Ranch Water District (IRWD) and planned for residential development to the east, the Willow Glen Condominiums to the south, and Tamarisk Park to the west. In general, areas to the east and south consist of residential uses of a low-density, suburban character interspersed with narrow, linear, undeveloped open spaces. Residential areas consist of both attached townhomes and single-family detached homes and are designated for low and low-medium density residential uses in the General Plan. Areas to the west and north of the proposed project site primarily consist of light industrial uses and office parks and are designated for light industrial uses. The IRWD property to the east is currently undeveloped, but is designated for medium density residential uses. The City has approved an application for Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 which allows for the development of residential, and park and recreation uses, a Civic Center, and existing and future IRWD public facilities.

There are no residential uses on the site but there are current and future residential uses next to the project site. The project site is located at the terminus of Peachwood. Development of the project site would not divide an existing community. Rather, the scale and size of the project would likely result in it functioning as an extension of the overall Serrano Highlands Planned Community. The proposed 85 unit single-family project was adequately addressed in the OSA PEIR and the impacts were fully analyzed and/or mitigated in the prior OSA PEIR. No new or different impacts will result from the proposed project.

b) Substantially conflict with existing on-site or adjacent land use due to project-related significant unavoidable indirect effects (e.g., noise, aesthetics, etc) that preclude use of the land as it was intended by the General Plan?

No New Impact. The project site is vacant. The Land Use Element of the City's General Plan identifies the general locations and intensities of land uses within the City. The site's existing General Plan land use designation is Low Density Residential, which allows 2 to 7 dwelling units per net acre. The site's zoning is Medium Density Residential within the Serrano Highland Planned Community designation. The project would develop 85 detached single-family residential units on a 24.6-acre site, for a density of 3.46 units per gross acre; thus, the project would be consistent with the existing General Plan designation. The OSA PEIR determined that development of Sites 1 through 6 would not result in incompatible land uses or create a nuisance for adjacent properties. As discussed in the OSA PEIR, project development would not conflict with any existing surrounding land uses, or any planned surrounding land uses as designated in the General Plan. Impacts would remain less than significant, there are no new impacts and no revisions to the PEIR are necessary.

A portion of Peachwood is proposed to be reconfigured into the design of the future residential development. Beginning with the intersection of Peachwood and Palmwood, the street and sidewalk

would taper to the west away from the existing retaining wall. The City's public easement over a portion of the right-of-way segment of Peachwood (north of the intersection of Peachwood and Tamarisk) would be fully vacated and replaced with a local private residential street and portions of new residential lots. The reconfigured roadway south of Tamarisk would allow new landscaped areas to be added adjacent to Peachwood. It would also result in a reduction in lanes. Instead of two lanes traveling in both directions, southbound Peachwood would transition from one travel lane to two (with a left turn lane onto Palmwood), and northbound Peachwood would consist of one travel lane and one left turn lane onto Tamarisk. Sidewalks would be included in the Peachwood street section, adjusted to reflect the reconfigured roadway. As shown in Figure 3, Aerial Photograph, Peachwood is currently a dead-end street terminating at the project site, consistent with the General Plan's Circulation Element. The reconfigured street would be consistent with the Circulation Element because it would provide access to, but not beyond, the project site. The removal of the City's public easement over the right-of-way and the reconfiguration of the street would not preclude vehicular or pedestrian access compared to existing conditions. Although reconfigured, Peachwood (as well as project streets and sidewalks) would still be accessible to area residents walking, biking or driving. The removal of the City's public easement over the right-of-way and the reconfiguration of the street would not conflict with adjacent land uses, limit access, preclude use of the land as was intended by the General Plan, or conflict with adopted plans; therefore there are no new impacts.

c) 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?

No New Impact. The General Plan land use designation for the site, in relation to the proposed land use, is discussed in the previous Section. The zoning district onsite is Serrano Highlands Planned Community-Medium Density Residential. Single-family dwellings and parks are permitted uses. As analyzed in Section 3.9 of the OSA PEIR, the proposed project would develop detached single-family homes on the site and would be consistent with the existing zoning regulations and adopted design guidelines. Impacts were adequately addressed in the OSA PEIR and would remain less than significant. PPP LU-1 applies to the proposed project and no mitigation is required. There are no new impacts.

d) Conflict with the Central and Coastal Natural Communities Conservation Program/Habitat Conservation Plan (NCCP/HCP) of which the City of Lake Forest is a participant?

No New Impact. The project site is in the plan area of the Orange County Central-Coastal Natural Communities Conservation Plan (NCCP); however, the site is not in the NCCP Reserve System. Compliance with provisions of the NCCP is required by mitigation measure 3.4-2 of the OSA PEIR, which is incorporated into the proposed project. See Section 3.4, *Biological Resources*. No new impacts to the NCCP would occur compared with those identified in the OSA PEIR.

3.11 MINERAL RESOURCES

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

No Impact. The proposed project site does not contain mineral resources of known value to the region and the state, and project development would not make such resources unavailable. No known mineral resources valuable to the region or the state were identified on Site 6 in the OSA PEIR, and no impact to mineral resources was identified in the PEIR. There are no impacts.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The project site is not in a mineral resource area designated in the City of Lake Forest General Plan. The General Plan designates one mineral resource area, the former El Toro Materials Sand and Gravel Mining site located 2 miles northeast of the project site. The project site is not used as a mining site and is not designated as a mining site in the City of Lake Forest General Plan. No impact would occur.

3.12 NOISE

Noise is defined as unwanted sound, and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and the City of Lake Forest have established criteria to protect public health and safety and to prevent disruption of certain human activities. This section includes a summary of the findings of the noise impact analysis; for supporting data, model outputs and calculations, refer to Appendix F of this Initial Study.

Terminology and Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- ***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.
- ***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 sound 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.
- ***Statistical Sound Level, L_n.*** The noise level exceeded during *n* percent of the measurement period, where *n* is a number between 0 and 100. The most common statistical sound levels used in community noise analyses are the L_{90}, L_{50} and L_{10} levels. The L_{90} is the sound level exceeded 90 percent of the time and is often considered the effective background or residual noise level. The L_{50} is the sound level exceeded 50 percent of the time and is known as the median noise level. The L_{10} is the sound level exceeded 10 percent of the time, is a measurement of intrusive sounds, such as aircraft flying overhead, and is commonly known as the effective maximum or intrusive sound level.

The following discusses potential short-term and long-term noise and vibration impacts associated with development of the proposed project:

Existing Noise Environment

The project site is currently undeveloped. The nearest land uses are condominiums to the south, the Tamarisk Park to the west, and the Pacific Commerce Centre to the north. A municipal water pump station is located approximately 350 feet to the north and office buildings (in the Pacific Commerce Centre) are approximately 450 feet to the north.

Existing ambient daytime noise levels were measured at two locations at the project site to identify the major noise sources in the area and to quantify representative noise levels. The noise measurements were taken on January 12, 2012, between 8:25 AM and 9:00 AM. The noise levels were measured using a Larson-Davis Model 820 sound level meter, which satisfies the American National Standards Institute for Type 1 general environmental noise measurement instrumentation. The sound level meter and microphone were mounted on a tripod five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was programmed in "slow" mode to record noise levels using the "A" weighting filter network. Meteorological conditions during the measurement periods were favorable and representative of the typical conditions, with clear skies, daytime temperatures of approximately 65 degrees Fahrenheit (°F), and calm winds. The average noise levels are identified in Table 3.12-1, and the noise monitoring locations are shown in Figure 16.

Table 3.12 1
Existing Noise Levels

Measurement Location	Measured Noise Levels (dBA)							Notes
	L_{eq}	L_{max}	$L_{1.6}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}	
1	48.0	60.5	45.9	49.0	48.1	47.6	46.6	Included landscaping activities at nearby homes and train horn noise
2	50.4	61.9	44.5	52.0	50.9	50.3	48.3	Included noise from HVAC units at nearby office buildings and distant traffic on Bake Pkwy.

During the survey, energy-average noise levels within the project site ranged from 48.0 to 50.4 dBA L_{eq}. The existing noise levels in the vicinity of the project site are characteristic of a low-density residential setting. Sources of noise at the project site are distant traffic on Bake Parkway, Trabuco Road, and Peachwood, landscaping activities in nearby homes, and air conditioning units from the office buildings north of the site. In general, though, the ambient noise environment was fairly non-descript, with no dominant or prevailing source. The existing topography and intervening structures to the north, west, and south tended to shield the site from major roadway noise and substantial commercial sources.

The future Baker Ranch Treatment Plant will be located approximately 800 to 1,000 feet south of the proposed project. The EIR for the Baker Ranch Treatment Plant analyzed potential noise impacts from the plant and a pump station onto surrounding residential areas (ESA 2011). The EIR found that construction and operational impacts would be less than significant.

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to noise:

PPP N-1 (*OSA PEIR MMRP Legal Requirements for Noise*) Compliance with Chapter 11.16, Noise Control, of the Lake Forest Municipal Code.

PPP N-2 (*OSA PEIR MMRP Noise Standard Condition N1*) Prior to the issuance of a grading permit, the applicant shall produce written evidence, or other evidence deemed reasonably acceptable by the Director of Development Services, that all construction vehicles or equipment, fixed or mobile, operated within 1,000 feet of any residential dwelling unit shall be equipped with properly operating and maintained mufflers.

PPP N-3 (*OSA PEIR MMRP Noise Standard Condition N2*) Grading and construction, construction activities shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m. Monday through Friday; 6:00 p.m. and 8:00 a.m. Saturday; and at any time on Sunday or a federal holiday.

PPP N-4 (*OSA PEIR MMRP Noise Standard Condition N3*) Prior to the issuance of building permits for each structure or tenant improvement other than a parking structure, the applicant shall submit a final acoustical report prepared to the satisfaction of the Director of Development Services. The report shall show that the development will be sound attenuated against present and projected noise levels, including roadway and railroad, to meet City interior and exterior noise standards. In order to demonstrate that all mitigation measures have been incorporated into the project, the report shall be accompanied by a list identifying the sheet(s) of the building plans that include the approved mitigation measures.

PPP N-5 (*OSA PEIR MMRP Legal Requirements for Noise*) Compliance with Chapter 11.16, Noise Control, of the Lake Forest Municipal Code.

The Appendix G of the CEQA Guidelines and *The City of Lake Forest CEQA Significance Thresholds Guide* (March 2009) were utilized as guidance in determining potential impacts to noise. A project would normally have a significant impact if it would:

a) Exposure of persons to or generation of stationary noise levels in excess of standards established by the City of Lake Forest as specified by the exterior noise standards set forth in the Noise Control Chapter of the Lake Forest Municipal Code?

No New Impact.

The OSA PEIR did not find any significant and unavoidable noise impacts for Site 6. With implementation of OSA mitigation measures, impacts were less than significant. The OSA PEIR stated that future projects are subject to environmental review as project-level discretionary approvals would be considered by the City to determine if projects would expose sensitive receptors to a substantial increase in ambient noise resulting from increased traffic volumes. This project level Noise analysis evaluates roadway noise in the vicinity of the project area. The following evaluates potential noise impacts to the proposed residential uses, and potential long-term noise impacts caused by project-related traffic to sensitive noise uses along roadways.

Noise Monitoring Locations

Site Boundary

1 Noise Measurement Location

0 350
Scale (Feet)

Source: Google Earth Pro 2011

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Noise Impacts from the Project

Traffic-Related Noise Impacts

The project would construct 85 single family homes. The project would generate 813 daily vehicular trips. To estimate traffic-related noise level increases associated with the Project, noise contours were calculated for the existing and future scenarios that were evaluated in the Traffic Impact Analysis;

prepared by Kunzman and Associates in January, 2012. Traffic noise contours are often utilized to evaluate sound level exposures on land adjacent to highways. Noise level contours represent the distance from the centerline of the road to the contour value shown. The noise level contours for the project site were estimated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (RD-77-108) and the noise prediction model calculations are included in Appendix F.

To determine if a project would cause a significant adverse noise impact, consideration must be given to the magnitude of the increase and the affected receptors. In general for community noise, a noise level increase of 3 dBA is considered barely perceptible, while an increase of 5 dBA is considered clearly noticeable. An increase of 3 dBA is often used as a threshold for a substantial increase. To evaluate offsite, project-related noise impacts under CEQA, project-related traffic must increase the ambient noise levels by 3 dBA or more and ambient noise levels under future, with-project conditions must exceed 65 dBA CNEL. If the future, with-project conditions do not exceed 65 dBA CNEL, then the significance threshold is an increase above the ambient level of 5 dBA.

Tables 3.12-2 and 3.12-3 show the traffic noise at 50 feet from the study-area roadway segments for existing (2011) and Project opening year (2015) timeframes, respectively; both with and without the project. Under existing conditions, the proposed project would result in noise level increases between 0 and 1.3 dBA CNEL. For 2015 conditions, the project would typically result in noise level increases between 0 and 1.2 dBA CNEL. With implementation of the proposed project, changes in traffic noise due to the project would not result in significant long-term, traffic-related noise impacts to offsite uses and no mitigation is required.

Table 3.12-2
Project Offsite Contributions for Existing Conditions

		CNEL at 50 feet (dBA)			
Roadway	**Segment**	**No Project**	**With Project**	**Project Contribution**	**Potential Impact?**
Trabuco Rd.	Bake Pkwy. to Peachwood	67.4	67.4	0.0	no
Trabuco Rd.	Peachwood to Lake Forest Dr.	67.7	67.8	0.1	no
Trabuco Rd.	south of Lake Forest Dr.	67.6	67.7	0.1	no
Peachwood	north of Tamarisk	54.2	55.5	1.3	no
Peachwood	Tamarisk to Calle Pradera	55.5	56.5	1.0	no
Peachwood	Calle Padrera to Palmwood Dr.	55.9	56.8	0.9	no
Peachwood	Palmwood Dr. to Trabucco Rd.	59.5	60.0	0.5	no
Lake Forest Dr.	north of Trabuco Rd.	68.1	68.1	0.0	no
Lake Forest Dr.	south of Trabuco Rd.	67.7	67.7	0.0	no
Bake Pkwy.	north of Trabuco Rd.	69.9	69.9	0.0	no
Bake Pkwy.	south of Trabuco Rd.	69.6	69.6	0.0	no

Table 3.12-3
Project Offsite Contributions for 2015 Conditions

Roadway	Segment	CNEL at 50 feet (dBA)			
		No Project	With Project	Project Contribution	Potential Impact?
Trabuco Rd.	Bake Pkwy. to Peachwood	67.6	67.7	0.1	no
Trabuco Rd.	Peachwood to Lake Forest Dr.	68.0	68.0	0.0	no
Trabuco Rd.	south of Lake Forest Dr.	67.8	67.9	0.0	no
Peachwood	north of Tamarisk	54.4	55.6	1.2	no
Peachwood	Tamarisk to Calle Pradera	55.8	56.7	0.9	no
Peachwood	Calle Padrera to Palmwood Dr.	56.1	57.0	0.9	no
Peachwood	Palmwood Dr. to Trabucco Rd.	59.8	60.2	0.4	no
Lake Forest Dr.	north of Trabuco Rd.	68.3	68.3	0.0	no
Lake Forest Dr.	south of Trabuco Rd.	68.0	68.0	0.0	no
Bake Pkwy.	north of Trabuco Rd.	70.1	70.1	0.0	no
Bake Pkwy.	south of Trabuco Rd.	69.8	69.8	0.0	no

Stationary-Source Noise Impacts from the Project

The proposed residential development would lead to the introduction of new stationary source noise at the project site, including heating, ventilation, and air conditioning (HVAC) units, as well as noise from landscaping activities. HVAC and other mechanical systems would be installed to comply with the City's municipal code regulating noise (Chapter 11-16). The existing residential uses to the south currently generate these types of noise sources and the proposed residential uses would be expected to generate comparable and consistent levels of noise that are not disturbing and would not cause adverse noise impacts to existing and proposed uses. Therefore, noise impacts from mechanical equipment would be less than significant. There are no new impacts.

Noise Impacts to the Project - Noise Compatibility

The City of Lake Forest Safety and Noise Element includes noise standards for interior and exterior residential uses. For single-family residential uses, exterior living areas such as rear yards should not exceed 65 dBA CNEL, and interior areas should not exceed 45 dBA CNEL, with windows closed. Title 24 of the California Building Code also requires that interior noise limits for residential units must not exceed an interior noise standard of 45 dBA CNEL.

Exterior Noise Levels

As described above, the existing ambient noise levels in the vicinity of the project site are characteristic of a low-density residential setting. The energy-average ambient noise levels within the project site ranged from 48.0 to 50.4 dBA L_{eq}. Based on previous experience with community noise under similar conditions, the CNEL metric could be expected to typically be within ±3 dBA of the peak-hour L_{eq}. Therefore, given the results of the ambient noise level measurements reported above and in consideration of the traffic noise prediction results, the proposed project site would have noise levels no greater than 55 to 60 dBA CNEL, well below the City's 65 dBA CNEL exterior noise standard for single-family homes. Thus, no mitigation would be required. There are no new impacts.

Interior Noise Levels

The City of Lake Forest and the state of California requires that new construction achieve an interior noise environment of 45 dBA CNEL or lower. The interior noise exposure is the difference between the projected exterior noise exposure at the building facade and the noise reduction of the structure. As previously discussed, the ambient noise measurements taken at the project site ranged from 48.0 to 50.4 dBA L_{eq} and the exterior noise levels at the building facades would be less than 55 to 60 dBA CNEL. To meet the 45 dBA CNEL interior noise standard, an exterior-to-interior noise reduction of 10 to 15 dB would be required for all homes.

Typical construction methods and standard building materials for the proposed land uses would conservatively provide a 12 dBA noise level reduction with windows open and a 20 to 25 dBA noise level reduction with windows closed (CalTrans 2006). Because residential construction with standard construction materials typically provides a 25 dBA noise level reduction, all single-family units would provide sufficient noise reduction characteristics to easily comply with the 45 dBA CNEL standards, and no mitigation would be required. There are no new impacts.

Stationary Noise

A water pump station is located approximately 350 feet to the north and office buildings are approximately 450 feet to the north. Typical noise sources from the operation of these uses are mechanical equipment such as HVAC units at the office buildings and pumps at the water distribution station. Based on observations during the site visit, noise from mechanical equipment and HVAC units at the nearby pump station and office buildings is barely perceptible and would not cause significant noise impacts to the proposed homes.

During the site visit there was no activity at the Tamarisk Park, located west of the project site. Potential noise from park activities would be from basketball games at the court centered approximately 250 feet to the west of the nearest proposed houses, and/or from softball/baseball games which would be approximately 350 feet to the west. There are no bleachers and no lighting at the baseball and basketball courts. To the south of Tamarisk Street (and south of the project site) are tennis courts, a basketball court, and a swimming pool at a community center complex. These outdoor facilities are located as near as 150 feet to the south of the nearest proposed houses. Activities at all these outdoor uses would occur sporadically; mostly on weekends and during daytime hours. These activities are required to comply with the City of Lake Forest noise ordinance standards, which limit noise to 55 dBA L_{eq} during the daytime hours, and 50 dBA L_{eq} to the nighttime hours[6]. Because of the sporadic and daytime usage of these outdoor facilities and because these activities are required to comply with the City's Noise Ordinance standards, impacts would be less than significant and no mitigation would be required. There are no new impacts.

b) Generate traffic that would cause a noise level increase of 3dB or more on a roadway segment adjacent to a noise sensitive land use, which include, but are not limited to residential (single-family, multi-family, mobile home), hotels, motels, nursing homes, hospitals, parks, playgrounds, and recreation areas, and schools?

No New Impact. The OSA PEIR did not find any significant and unavoidable traffic noise impacts for Site 6 and impacts were less than significant. As discussed in Section 3.12a above, under existing conditions, the proposed project would result in noise level increases between 0 and 1.3 dBA CNEL. For 2015

[6] Daytime hours are defined as 7 AM to 10 PM and nighttime hours are 10 PM to the following 7 AM.

conditions, the project would typically result in noise level increases between 0 and 1.2 dBA CNEL. With implementation of the proposed project, changes in traffic noise due to the project would not result in significant long-term, traffic-related noise impacts to offsite uses and no mitigation is required. There are no new impacts.

c) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

No New Impact. The OSA PEIR did not find any significant and unavoidable noise impacts for Site 6 with implementation of OSA PEIR mitigation measure requiring project-specific analysis (Noise MM-1 herein). Groundborne vibration and groundborne noise may be generated during the construction and operations phases of the projects, but impacts from these effects are less than significant, as discussed below.

Project construction may expose people to groundborne vibration. Construction activities can generate varying degrees of ground vibration, depending on the construction procedures, types of equipment used, and proximity to vibration-sensitive uses. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with increasing distance from the source. Vibration is typically noticed nearby when objects in a building generate noise from rattling windows or picture frames. It is typically not perceptible outdoors (FTA, 2006), and, therefore, impacts are based on the distance to the nearest building. The effect on buildings near a construction site varies depending on soil type, ground strata, and receptor building construction. The generation of vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. Ground vibrations from construction activities rarely reach levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to a construction site. Vibration would primarily occur during the grading phase of construction. Peak vibration levels occur when construction equipment operates closest to the homes near the boundaries of the site's property line. Off-road construction equipment operating at the southern boundary of the project site nearest to the residential homes would be an infrequent occurrence. Although the maximum vibration could be perceptible in certain instances, peak vibration events occur infrequently. These peak events would occur during the portions of the day when most people have increased tolerance to vibration intrusions. Also, the duration for which equipment would be working in close proximity would be limited. Construction-related vibration impacts are described below.

Vibration-Induced Architectural Damage

Ground vibrations from construction activities do not often reach the levels that can damage structures (FTA 2006). Rock blasting and impact pile-driving generate the highest levels of vibration. However, project construction would not require impact pile-driving and blasting. Nonetheless, minor architectural (e.g., cosmetic) damage from heavy construction equipment operating at the boundary of the site could occur. Project-related construction vibration was evaluated for its potential to cause minor architectural damage based on FTA's architectural damage criteria. According to guidelines from the FTA for assessing damage from vibration caused by construction equipment, the threshold at which there is a risk of architectural damage to normal houses with plastered walls and ceilings is 0.2 peak particle velocity (PPV) in inches per second (in/sec) (FTA 2006). Heavy construction equipment operating at the site would include bulldozers, scrapers, and compactors, which could be as close as 70 feet to the nearest existing home structures to the south. Table 3.12-4 shows the vibration levels from typical earthmoving construction equipment at the reference distant of 25 feet and at the nearest home structures, 70 feet away.

Table 3.12-4
Vibration Levels During Construction

Equipment	PPV at 25 feet (in/sec)	PPV at 70 feet (in/sec)
Vibratory Roller	0.210	0.045
Large bulldozer	0.089	0.019
Loaded trucks	0.076	0.016
Jackhammer	0.035	0.007
Small bulldozer	0.003	0.001
Source: FTA 2006		

As shown in Table 3.12-4, construction activities associated with the project would not exceed 0.045 PPV in/sec at the nearest homes (due to the rapid decrease of vibrational energy with increasing distance from the source). These predicted values are well below the FTA's criteria for vibration-induced architectural damage. Further, according to Caltrans' research, earthmovers and haul trucks have never exceeded 0.10 PPV in/sec – that is, one half of the architectural damage risk level – at 10 ft (Caltrans 2002). Therefore, there would be no risk of vibration-induced architectural damage during project construction. There are no new impacts.

Vibration Annoyance

The level where vibration becomes readily perceptible is 0.08 PPV in/sec, and the level where continuous vibration becomes annoying to people is 0.1 PPV in/sec (FTA, 2006). Construction activities are typically distributed throughout the project site. When heavy construction equipment is operating in the southern boundary of the site, approximately 70 feet away from the nearest home structure adjacent to the southern site boundary, vibration levels would not exceed 0.045 PPV in/sec, and would be barely perceptible. As heavy construction equipment moves around the site, average vibration levels at the nearest homes would diminish with increasing distance between the homes and the equipment and would generally be not perceptible. In summary, the operation of heavy equipment would not cause vibration-induced architectural damage to nearby homes, and would generally be below levels that are perceptible. Vibration during construction would be very sporadic and barely perceptible at the nearest homes, and therefore would be less than significant. There are no new impacts.

Operations Phase Vibration

The closest offsite vibration-sensitive structures are the residences to the south of the project site. Operation of the project would be consistent with and comparable to the existing residential land uses to the south of the project site. Further, there would be no noteworthy sources of operations vibrational energy associated with the project. Thus, the Project would not generate substantial levels of vibration and all potential vibration impacts would be less than significant. No mitigation measures would be required. There are no new impacts.

d) A substantial permanent increase in "future with project" ambient noise levels for sensitive land uses (identified in the City of Lake Forest General Plan Table 3-1 in Section 3.3, Interior and Exterior Noise Standards) in the project vicinity above levels existing without the project?

No New Impact. The OSA PEIR did not find any significant and unavoidable noise impacts for Site 6. As demonstrated in item a) above, the proposed project would not generate a substantial permanent increase in the ambient noise level related to stationary sources or from project-related traffic along local roadways. Impacts from project-related increases to the ambient noise environment would be less than significant, and no mitigation measures would be required. Therefore, there are no new impacts.

e) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

No New Impact. With implementation of existing regulations, the OSA PEIR found temporary construction noise impacts to be less than significant. The City of Lake Forest exempts construction-related noise from the noise ordinance standards when construction occurs during the daytime hours of 7 AM to 8 PM on Monday through Saturday. Although exempt, the analysis below addresses noise impacts from construction equipment at the nearest homes south of the project site.

Access routes for construction vehicles would be on Peachwood and project-related construction worker vehicles, haul trucks, and vendor trucks would pass by residential uses that are adjacent to this road. There would be no soil haul import/export, but approximately 20 round-trips for disposal trucks would be required during the grading period to remove the existing vegetation from the site. Daily project-related construction traffic would be nominal. Although noise from individual truck pass-bys may be noticeable and potentially annoying, construction-related truck traffic would be sporadic and not substantially increase average noise levels along local roadways. Truck noise would not create significant noise impacts at homes along Peachwood.

Construction activities at the project are expected to last approximately 18 months. Noise generated during onsite construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. Each stage involves the use of different types of construction equipment and therefore, has its own distinct noise characteristics. In typical construction projects, the grading phase generates the highest noise levels since it involves the largest equipment. The grading activities that typically cause the highest noise levels (e.g., pile driving, blasting, and rock crushing) would not be required for the development of the proposed project. After grading is completed, subsequent construction phases include foundation work, structure erection, paving, and finishing. As these construction phases require less heavy-duty equipment, they tend to generate lower noise levels than are produced during the grading phase. The grading phase would last approximately 90 days and the assumed equipment mix includes two bulldozers, two scrapers, a compactor, and a grader.

These types of equipment can reach maximum noise levels of up to 85 dBA L_{max} at 50 feet. Noise from construction equipment decreases by approximately 6 dBA (or more) with each doubling-of-distance between the source and any given receptor. Maximum noise levels would occur when heavy construction equipment is operating near the southern boundary of the project site, where they would be the closest to existing homes. Construction may occur as close as 100 feet from residential areas along Sonoma Drive, and as close as 250 feet to homes along New Haven Drive. Assuming the operation of two pieces of construction equipment (such as a grader and a dozer) operating simultaneously, the combined maximum short-term noise level at the nearest home along Sonoma Drive may reach levels of up to 82 dBA L_{max}, and 74 dBA L_{max} at the homes along New Haven Drive. While these maximum noise

levels would be noticeable at nearby homes (near the southern project boundary), these are worst-case conditions that would be sporadic and short-term and would infrequently happen when equipment is operating both simultaneously and at full power.

Because construction equipment typically moves from one location on the site to another during each operation and because it operates with varying power levels, a more realistic and more informative method of analysis is to assume the operation of all construction equipment operating simultaneously at the center of the site. Noise levels from project-related construction activities were calculated using the Roadway Construction Noise (RCN) Model with the use of all applicable construction equipment at the same time at an average distance to the nearest surrounding noise-sensitive receptors (FHWA, 2006). Under this scenario, the average noise level at the nearest residential properties along Sonoma Drive, approximately 500 feet south of the site, may reach noise levels of 66.5 dBA L_{eq}, and the noise level at the existing homes along New Haven, approximately 700 feet south of the site, may reach noise levels of 63.6 dBA L_{eq}.

In summary, existing noise-sensitive uses surrounding the project site would be exposed to increased noise from construction activities at the site. While construction noise would be sporadically noticeable during full-power operations of heavy grading equipment (particularly while this work is being conducted near the southern and western site boundaries), the average noise levels at nearby homes would range from 63.6 to 66.5 dBA L_{eq} over the construction grading period. These levels would be limited to the daytime hours (i.e., 7 AM to 8 PM) during weekdays and Saturdays; as required by City of Lake Forest Municipal Code. Noise levels associated with construction activities would be higher than the existing ambient noise levels in the project area, but would subside once construction of the proposed project is completed. Given the average noise range over the construction grading period, the location of surrounding uses and that construction activities would be limited to daytime hours when the majority of people are at work, as specified in the City's noise ordinance, noise impacts from construction activities would be less than significant. Therefore, there are no new impacts.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measures (3.10-1 to 3.10-3) are taken directly from the OSA PEIR. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. They have been renumbered in this document for ease of reference. All of the mitigation measures listed apply to and will be implemented for the proposed project.

Noise MM-1 (*OSA PEIR MMRP Mitigation Measure MM 3.10-1*). A condition of approval shall be placed on all Site Development Permit and/or Use Permit approvals for site-specific developments, which states:

- Construction staging areas, **material delivery (loading/unloading) areas** and operation of earth moving equipment on a project site shall be **located so as to maintain the greatest distance from existing residential uses and other noise-sensitive uses and shall be** more than 25 feet away from sensitive receptors (such as residences, schools, hospitals). If equipment will be operated within 25 feet of any sensitive receptor, the applicant shall prepare a construction plan which quantifies the anticipated vibration levels associated with the construction (in VdB) and the length of time the construction is to occur, and documents efforts to minimize impacts associated with groundborne vibration.

- **Prior to the start of and for the duration of construction, the contractor shall properly maintain and tune all construction equipment in accordance with the manufacturer's recommendations to minimize noise emissions.**

- **Prior to use of any construction equipment, the contractor shall fit all equipment with properly operating mufflers, air intake silencers, and engine shrouds which are no less effective than as originally equipped by the manufacturer.**

- **The construction contractor shall post a clearly visible sign at the construction site boundary listing a contact name and telephone number for lodging a noise complaint.**

Noise MM-2 (*OSA PEIR MMRP Mitigation Measure MM 3.10-2*). Prior to the **first approval of the tentative tract map** ~~issuance of a Site Development Permit and/or Use Permit~~ for site-specific development within the Project Area, the City shall conduct a tiered site-specific analysis under CEQA to determine whether the individual project will expose sensitive receptors to either a substantial increase in ambient noise resulting from increased traffic volumes generated by that project or excessive groundborne vibration or groundborne noise levels. Where significant impacts are identified, appropriate mitigation shall be required. *(Satisfied by Noise Impact Analysis contained in the Pinnacle at Serrano Highlands Initial Study March 2012)*.

Noise MM-3 (*OSA PEIR MMRP Mitigation Measure MM 3.10-3*). A condition of approval shall be placed on all Site Development Permit and/or Use Permit approvals for site-specific developments, which states:

- Prior to issuance of a building permit, the applicant shall submit plans for shielding of all HVAC equipment to provide noise attenuation that will reduce noise from HVAC systems to 65 dBA or less when measured at 50 feet from the noise source.

After implementation of PPPs and OSA PEIR mitigation measures, impacts remain less than significant. The proposed 85 unit single-family project was adequately addressed in the prior OSA PEIR and the impacts were fully analyzed and/or mitigated. No new or different impacts will result from the proposed project.

f) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No New Impact. The project site is not within an airport land use plan or within two miles of a public airport. The nearest airport is John Wayne Airport about 10 miles west of the site (Airnav 2012). Therefore people residing or working in the project area would not be exposed to excessive noise levels and no noise impacts from a public airport or public use airport would occur. No mitigation measures are required. There are no new impacts.

g) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No New Impact. The project site is not within the vicinity of a private airstrip or heliport. The nearest heliport is the Saddleback Memorial Medical Center Heliport, approximately 3.5 miles south of the site (Airnav 2012). People residing in the project area would not be exposed to excessive noise levels and no noise impacts from a private airstrip would occur. No mitigation measures are required. There are no new impacts.

3.13 POPULATION AND HOUSING

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)?

No New Impact. There are no existing residences or businesses onsite. The project would add 85 detached single-family homes to the site; no commercial uses are proposed. The OSA PEIR assumed a maximum of 85 units for the project site (Site 6). Using the OSA PEIR factor of 2.91 persons per dwelling unit (as stated in Section 3.11, *Population and Housing* of the OSA PEIR and General Plan Table LU-3), the proposed project's 85 residential units would result in a population increase of approximately 248 persons within the City of Lake Forest. The City uses Table LU-3 to estimate the average density per dwelling unit, as provided in the Land Use Element of the Lake Forest General Plan.

Project construction would generate construction employment. However, as the unemployment rate in Orange County in November 2011 was 8.1 percent (EDD 2012), it is expected that construction employment would draw workers from the local labor force rather than attract workers from out of the region. The project would not involve the extension of roads or other infrastructure offsite that could induce population growth offsite. The project would involve development of roads and utility infrastructure onsite.

The project would not induce population growth beyond the existing population growth forecast for the City, as analyzed in the OSA PEIR. Therefore, the project is within the scope of, and adequately analyzed in, Section 3.11 of the OSA PEIR. There are no new impacts.

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

No Impact. There is no existing housing onsite, and the project would not displace existing housing. The project would develop 85 residential units onsite. Project development would not require the construction of replacement housing offsite. No adverse impact would occur.

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

No Impact. The site is vacant and the project would not displace existing residents. The project would develop 85 residential units onsite. Project development would not require the construction of replacement housing offsite, and no adverse impact would occur.

3.14 PUBLIC SERVICES

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?

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to fire protection services:

PPP PS-1 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F1*) Prior to issuance of a grading permit, the applicant shall obtain approval of the Fire Chief for all fire protection access roads within 150 feet of all portions of the exterior of every structure on the site. The site plan shall indicate existing and any proposed fire hydrants. The site plan shall indicate the locations of the existing and/or proposed fire lane markings. Please contact the OCFA at (714) 573-6100 or visit the OCFA website to obtain a copy of the "Guidelines for Emergency Access."

PPP PS-2 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F2*) Prior to the issuance of a grading permit, the applicant shall submit construction details for any access gate to the Fire Chief for review and approval. The Fire Chief will approve the construction details if the Chief reasonably determines that the construction details are in compliance with the Uniform Fire Code and such other Federal, State, and Local laws, regulations, ordinances, standards, and policies as are applicable.

PPP PS-3 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F3*) Prior to the issuance of a building permit, the applicant shall submit evidence of the on-site fire hydrant system to the Fire Chief and indicate whether it is public or private. If the system is private, it shall be reviewed and approved by the Fire Chief prior to building permit issuance, and the applicant shall make provisions for the repair and maintenance of the system in a manner meeting the approval of the Fire Chief.

PPP PS-4 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F4*) Prior to the issuance of a building permit for combustible construction, the applicant shall submit a letter on company letterhead stating that water for fire-fighting purposes and all weather fire protection access roads shall be in place and operational as required by the Uniform Fire Code before any combustible materials are placed on the site.

PPP PS-5 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F5*) Prior to the issuance of a building permit, the applicant shall provide evidence of adequate fire flow. The "Orange County Fire Authority Water Availability for Fire Protection" form shall be signed by the applicable water district and submitted to the Fire Chief for approval. If sufficient water to meet fire flow requirements is not available an automatic fire extinguishing system may be required in each structure affected.

PPP PS-6 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F6*) Prior to the issuance of a building permit, plans for the automatic fire sprinkler system shall be submitted to the Fire Chief for review and approval. This system shall be operational prior to building permit final inspection.

PPP PS-7 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F7*) Prior to building permit final inspection, the fire alarm system shall be operational.

PPP PS-8 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F8*) Prior to the issuance of a building permit, the applicant shall contact the Orange County Fire Authority Hazardous Materials Disclosure Office at (714) 744-0463 to complete and submit a "Hazardous Materials Business Information and Chemical Inventory Packet."

PPP PS-9 (*OSA PEIR MMRP Fire Protection Standard Conditions of Approval F9*) Prior to building permit final inspection, all fire hydrants shall have a "Blue Reflective Pavement Marker" indicating its location on the street or drive per the Orange County Fire Authority Standard and are subject to review and approval by the Fire Chief. On private property these markers are to be maintained in good condition by the property owner.

PPP PS-10 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Public Services*) As requested by the Orange County Fire Authority, site-specific development plans shall include provisions for installation of Optical Traffic Preemption devices on new or upgraded traffic signals within the site area as deemed necessary by the City with input by the OCFA.

PPP PS-11 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Public Services*) Compliance with OCFA Very High Fire Severity Hazard Zone/Special Fire Protection Area guidelines.

PPP PS-12 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Public Services*) Payment of statutory fees for public services (or enter into mitigation agreement for schools as a project design feature). See Mitigation Measure 3.12-3.

No New Impact.

The Orange County Fire Authority (OCFA) provides fire protection and emergency medical services to the City of Lake Forest, and would provide such services to the project. Four OCFA fire stations would respond, as needed, to calls for service from the project; the four stations are described in Table 3.14-1 below.

Table 3.14-1
Orange County Fire Authority (OCFA) Stations

Station	Location	Equipment	Daily Staffing
FS 19	23022 El Toro Road, Lake Forest, about 2.8 miles south of the site	1 paramedic engine 1 reserve squad	2 firefighter-paramedics; 2 firefighters; various reserve personnel
FS 38	26 Parker, Irvine, about 1.8 miles southwest of the site	1 engine 1 medic van	2 firefighter-paramedics; 3 firefighters
FS 54	19811 Pauling, Lake Forest, about 4.8 miles northeast of site	1 paramedic assessment engine	1 firefighter-paramedic; 2 firefighters

FS 42	19150 Ridgeline Road, Lake Forest, about 7.1 miles northeast of the site	1 paramedic assessment engine 1 brush engine	1 firefighter-paramedic; 2 firefighters

Source: EIP 2008

The average response time for all emergency calls for service in the OSA PEIR was five and a half minutes (EIP Associates 2008). OCFA's emergency response goal is reaching an emergency call within 7 minutes 20 seconds from receipt of call to on scene for first unit 80 percent of the time, and 10 minutes from receipt of call to on scene for a paramedic, 80 percent of the time. OCFA is meeting or exceeding the emergency response time goal (Hernandez 2012).

As discussed in the OSA PEIR, the project is expected to result in some increase in calls for fire protection and emergency medical services. The project would add approximately 248 residents and 85 residential units to the OCFA service area. Development of the project site could increase the demand for fire protection services, which could result in the deterioration of fire services within the service area. Project impacts to fire protection would be potentially significant. OCFA services are funded partially by development fees. Existing OSA PEIR mitigation measures require all developers to enter into a Secured Fire Protection Agreement with OCFA, which would ensure the availability of adequate fire protection services. As concluded in Section 3.12 of the OSA PEIR, implementation of Mitigation Measure 3.12-2 (PS MM-1 herein) would reduce this impact to less than significant. The impacts to fire protection services were fully analyzed and/or mitigated in the prior OSA PEIR and no new or different impacts will result from the proposed activity. Therefore, there are no new impacts.

The project includes a fuel modification plan for the open space along the project's northern edge. The fuel modification zones were designed and located to address estimated maximum fire intensities at the project site. The fuel modification plan would mitigate potential threats to structures and occupants such that they do not present a risk. The usage of fuel modification, enhanced construction features, and ongoing maintenance of the fuel modification zone, would ensure that the project would be protected from wildfire threats. The fuel modification plan would require approval by the OCFA. Following preparation of a fuel modification plan and compliance with existing PPPs regarding payment of impact fees, project implementation would not cause the deterioration of fire services.

OCFA would provide emergency services to the site during construction, should an emergency incident occur. The impact to emergency services during construction would likely be limited to occasional worker injuries or structural fires for the duration of construction. As the need for emergency services at the project site during construction would be minimal, the project's short term impacts would not result in the deterioration of fire protection services or require the expansion of physical police service facilities. Short-term construction impacts are less than significant. There are no new impacts.

No significant impacts will occur and the proposed project does not require any changes to the OSA PEIR related to fire protection services.

Applicable OSA PEIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR. Modifications to the original mitigation measures are identified in ~~strikeout text~~ to indicate deletions and **bold underlined** to signify additions. The mitigation measures have been renumbered in this document for ease of reference. The mitigation measures listed apply to and will be implemented for the proposed project.

PS MM-1 (*OSA PEIR MMRP Mitigation Measure 3.12-1*). Any development shall comply with OCFA's VHFSHZ~~/SFPA~~ guidelines.

PS MM-2 (*OSA PEIR MMRP Mitigation Measure 3.12-2*). Prior to ~~approval of each Master, Tentative Tract, or Project Tract Map~~, **issuance of grading permits** the site developers shall enter into a Secured Fire Protection Agreement with OCFA that will ensure an adequate level of service is maintained in the City. **Evidence of an OCFA approved agreement shall be submitted to the Development Services Department.**

b) Police protection?

No New Impact. Impacts to emergency services were evaluated in the OSA PEIR as less than significant after implementation of mitigation measures. The proposed project involves the same amount of development intensity compared to development on Site 6 as analyzed in the OSA PEIR, and therefore would result in the same increase in demand for police services.

The Orange County Sheriff's Department (OCSD) provides police protection to the City of Lake Forest under contract with the City, and would provide police protection to the project. The California Highway Patrol provides secondary support services to county and city police services as needed. OCSD police services to the City of Lake Forest are based at two facilities: the OCSD Community Policing Center at Lake Forest City Hall, 25550 Commercentre Drive; and an OCSD substation in the City of Aliso Viejo. For Priority One calls for service, that is, emergency calls regarding potential threats to human life, OCSD's response time goal for the City of Lake Forest is to respond within six minutes. The average response time is four minutes and forty eight seconds (Nelson 2012).

OCSD would provide emergency services to the site during construction, should an emergency incident occur (such a trespass, theft or injury). As the need for emergency services at the project site during construction would be minimal, the project's short term impacts would not result in the deterioration of police services or require the expansion of physical police service facilities. Project operation is expected to result in the same amount of calls for service as compared to the project (Site No. 6) analyzed in the OSA PEIR. The ability of the OCSD to support the needs of future growth is dependent on their financial ability to hire additional sworn personnel. Generally, staffing needs are addressed in OCSD's annual budgeting process. As indicated in the OSA PEIR, the OCSD is able to accommodate the needs of the City's projected growth. The project is not expected to create a need for new police facilities, and impacts to police protection would be less than significant. There are no new impacts and no mitigation is needed.

c) Schools?

No New Impact. The project site is within Saddleback Valley Unified School District (SVUSD), which would provide K-12 public school services to the project. As shown in Table 3.14-2 below, the project is estimated to generate 53 students, based on student generation rates used in the OSA PEIR.[7]

[7] The number of students the project would generate was estimated using student generation factors from the California Office of Public School Construction. Elementary School District: 0.5 students per dwelling unit; High School District: 0.2 students per dwelling unit. Prorating the Elementary School District rate for grades K–6 (7 of 9 years) and 7–8 (2 of 9 years) gives rates of 0.39 elementary school students and 0.11 middle school students per unit. (City of Lake Forest OSA PEIR 2008)

Table 3.14-2
Student Generation by Proposed Project

Level	Student Generation	
	Per Unit	Total
Elementary School	0.399	34
Middle School	0.103	9
High School	0.111	10

The need for additional school services is addressed by compliance with school impact assessment fees per Senate Bill 50 (SB 50). Payment of fees is considered full mitigation per California Government Code Section 65995(h). SB 50 establishes a per-pupil funding formula for new school construction, requires local districts to match state funds for new construction, allows school districts to establish reimbursement agreements with developers to cover their fees, and authorizes an Affordable Housing Assistance Program. These fees are collected by school districts at the time of issuance of building permits.

The proposed project would be required to pay school impact fees as outlined in the School Facilities Funding Mitigation Agreement, which is part of the Development Agreement. Payment of these fees would be in excess of SB50 fees and would offset impacts from increased demand for school facilities and services by providing an adequate financial base to construct and equip new and expanded schools. As analyzed in the OSA PEIR, Section 3.12, impacts related to school services would be reduced to a less than significant level with implementation of mitigation measure PS MM-3. The impacts to school services were fully analyzed and/or mitigated in the prior OSA PEIR and no new or different impacts will result from the proposed activity. Therefore, there are no new impacts.

Applicable OSA PEIR Mitigation Measures

The following mitigation measures are taken directly from the OSA PEIR with no changes made. The mitigation measures have been renumbered in this document for ease of reference. The mitigation measures listed apply to and will be implemented for the proposed project.

PS MM-3 (*OSA PEIR MMRP Mitigation Measure MM 3.12-3*) Consistent with current City requirements, the developer shall pay statutory school fees in effect at the time of issuance of building permits to SVUSD and/ or enter into a mitigation agreement. (*Satisfied by the project's recorded Development Agreement*)

d) Parks?

No New Impact. As discussed below in Section 3.15, *Recreation*, demand for parks is determined by the population within the parks' service areas. The project is estimated to add approximately 248 persons to the City. Thus, the project would result in some increase in demand for parks and recreational facilities over existing conditions. The project would include a landscaped 1.5-acre linear park extending through the middle of the project site that would include an 16-foot wide paved walking path. Additionally, two pocket parks are proposed onsite.

There are 30 City parks and recreational facilities in Lake Forest totaling 217 acres. These facilities are equipped with a variety of recreation improvements including team sports facilities, picnic tables, pedestrian and bicycle paths, and children's play areas. Tamarisk Park, immediately west of the project

site, offers a full basketball court, 11 picnic tables, a baseball diamond and playground. Peachwood Park, located .3 miles south of the project site at 21132 Peachwood, offers a playground and 4 picnic tables.

The project's Development Agreement includes provisions for contributions towards community-wide park facilities and the neighborhood park facilities. No adverse impact arising from construction of new or altered parks was identified in the PEIR. Considering the existing acreage of parkland and recreational facilities in the City, the linear park and pocket parks that would be developed as part of the project, and the neighborhood park mitigation fee applied to the proposed project, project development is not expected to result in any additional such increased demand for parks as to require construction of new or expanded parks. Impacts would remain less than significant, as analyzed in the OSA PEIR and no mitigation measures are needed. There are no new impacts.

e) Other public facilities?

No New Impact. The Orange County Public Library provides library services to the City of Lake Forest through two branches: El Toro Library at 24672 Raymond Way and the Foothill Ranch Library at 27002 Cabriole Way in Lake Forest. The El Toro Library has an 85,000-item collection, while the Foothill Ranch Library contains 65,000 items. The County of Orange's standards for library service are 0.2 square feet of library space and 1.5 volumes of library materials per person. The two libraries in Lake Forest have a total of approximately 150,000 items while the City of Lake Forest's estimated population for 2011 was 77,490, for 1.93 items per person; thus, the Orange County Public Library is meeting the County standard for library collection size for the City of Lake Forest.

The project would add approximately 248 residents to the project site. At the County standard of 0.2 square feet and 1.5 collection items per person, the project would create needs for 50 square feet of library space and 372 additional collection items. The proposed project generates the same number of persons and the same demand for library services compared to the Site 6 project analyzed in the OSA PEIR. The City of Lake Forest collects library impact fees from all residential development in the City on behalf of the Orange County Public Library. OSA PEIR determined that impact fees paid by the project applicant and provided to the Orange County Public Library would reduce project impacts to libraries, and impacts would remain less than significant. Therefore, there are no new impacts to library services compared to those identified in the OSA PEIR and previous analysis is adequate. There are no new impacts.

Applicable OSA Program EIR Mitigation Measures

The following mitigation measure is taken directly from the OSA PEIR with no changes made. It has been renumbered in this document for ease of reference. The mitigation measure listed applies to and will be implemented for the proposed project.

PS MM-4 (*OSA PEIR MMRP Mitigation Measure 3.12-4*). Prior to issuance of building permits, the developer(s) shall pay to Orange County Public Library the library impact fees in effect at the time of building permit issuance.

3.15 RECREATION

a) Would the project 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?

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to recreation:

PPP R-1 (*OSA PEIR Project Design Feature for Recreation*) The proposed project includes community parks and neighborhood parks in excess of subdivision code requirements.

PPP R-2 (*OSA PEIR Standard Conditions and Legal Requirements for Recreation*) Compliance with the City's Subdivision Ordinance (Title 7 of the Lake Forest Municipal Code) and Development Agreement obligations is required of all new residential development.

No New Impact. The City's established park standard is 5 acres of parkland per 1,000 persons. The OSA split up the required parkland dedication into two components and required 3 acres per 1,000 estimated population for neighborhood parks and 2 acres per 1,000 estimated population for the community park (the public facilities/sports park package). The project's 248 residents would require 0.74 acres of neighborhood parks and 0.49 acres of community parks. Pursuant to the recorded DA, each OSA development site is required to provide parkland or pay in-lieu fees to satisfy the neighborhood park requirement. In addition, in-lieu fees for community parks from all project sites will be used for development of the 45-acre sports park and Community/Civic Center. Impacts to park facilities were found to be less than significant in the OSA PEIR. The proposed project would not cause any new impact leading to deterioration of park facilities compared to impacts analyzed in the OSA PEIR.

The proposed project would involve development of the same number of housing units, and would generate the same number of people onsite as development of Site 6 as analyzed in the OSA PEIR. The project proposes approximately 15 acres of open space, including a 1.5 acre linear park with walkway and two pocket parks totaling 0.2 acres. Non-park open space areas are also provided, but are not intended for recreational purposes. The proposed parks are shown on Figure 11, *Conceptual Landscape Plan*.

Pursuant to the provisions of the OSA PEIR and the recorded DA, the applicant will meet the required parkland dedication requirements by providing payment of in-lieu fees in the amount of $16,151 per unit (subject to a inflation escalator). Payment of in-lieu fees ensures that substantial deterioration of existing park and recreational facilities would not occur. The impacts to recreational services were fully analyzed and/or mitigated in the prior OSA PEIR and no new or different impacts will result from the proposed activity. Therefore, there are no new impacts to recreation services.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No New Impact. The project would include one linear park that would span the project site near the middle and would be roughly 1.5 acre in area and two pocket parks. Nearly the entire park would consist of landscaping and a paved pedestrian path/utility service road; thus, the park would be intended mainly for passive recreation. The impacts of development of the linear park and pocket parks would be part of

the impacts of development of the whole project that are discussed throughout this document. The project would not involve the development of offsite recreational facilities directly but would contribute funding for an offsite sports park pursuant to provisions of the DA. Impacts would be less than significant and the proposed project does not require any changes to the OSA PEIR related to recreation. There are no new impacts.

3.16 TRANSPORTATION/TRAFFIC

The information and analysis in this section is based in part on the TTM 15594 Traffic Impact Analysis by Kunzman Associates, Inc. dated February 2012 and a Lake Forest Public Works memo, dated February 2012; both are included as Appendix G of this Initial Study.

Existing Plans, Programs, and Policies

The following measure is an existing plan, program, or policy (PPPs) that applies to the proposed project and will help to reduce and avoid potential impacts related to transportation and traffic:

PPP T-1 (*OSA PEIR MMRP Transportation/Traffic FFP1*) Prior to the issuance of a building permit, the applicant shall pay fees to the City of Lake Forest as prescribed in the Major Thoroughfare and Bridge Fee Program, including but not limited to the following:

- Foothill Circulation Phasing Plan – Zone 2
- Foothill/Eastern Transportation Corridor – Zone A
- Santiago Canyon Road

a) 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?

No New Impact.

Findings of the OSA PEIR:

Impacts of the OSA projects to intersection operation were found to be less than significant. Several intersections were identified where mitigation measures were required to reduce impacts of the OSA projects to less than significant; however, all of the required mitigation was already included in the Lake Forest Transportation Mitigation (LFTM) Program. Therefore, no additional mitigation measures were required to reduce project impacts to less than significant levels.

Existing Conditions

Roadways

Study area roadways are described below in Table 3.16-1.

Table 3.16-1
Study Area Roadways

Roadway	Travel Lanes	Direction	General Plan Classification	Existing Traffic Volume (ADT)
Bake Parkway	Six lanes divided	North-south	6 Lane Divided Roadway	38,800 to 41,400
Peachwood	Four lanes divided	North-south	Not classified	2,300 to 7,900
Lake Forest Drive	Four lanes divided to six lanes divided	North-south	6 Lane Divided Roadway	25,300 to 27,400
Tamarisk	Two lanes undivided	East-west	Not classified	900
Calle Pradera	Two lanes undivided	East-west	Not classified	900
Palmwood Drive	Two lanes undivided	East-west	Not classified	4,300
Irvine Boulevard/ Trabuco Road	Five lanes divided to six lanes divided	East-west	6 Lane Divided Roadway	23,100 to 26,400

Intersections

Existing study area intersections are described below in Table 3.16-2.

Table 3.16-2
Study Area Intersections

Roadways	Traffic Controls
Bake Parkway at:	
Irvine Boulevard/ Trabuco Road	Traffic Signal (TS)
Peachwood at:	
Tamarisk	Cross-Street Stop (CSS)
Calle Pradera	CSS
Palmwood Drive	CSS
Trabuco Road	TS
Lake Forest Drive at:	
Trabuco Road	TS

Source: Kunzman 2011

Existing Intersection Operation

Operation of signalized intersections is assessed using the Intersection Capacity Utilization (ICU) method; while operation of unsignalized intersections is assessed using the Intersection Delay method. Both methods involve comparing the traffic volume of an intersection to the capacity of the intersection. The ICU method yields a Volume to Capacity ("V/C") ratio, while the Intersection Delay method yields an average delay per vehicle in seconds. A Level of Service (LOS) is then determined based on the V/C ratio or the delay. LOS is a qualitative rating of intersection operation ranging from LOS A to LOS F, where LOS A indicates free flow of traffic with minimal delays and LOS F indicates severe congestion with extreme delays. LOS are defined in terms of V/C ratio or delay below in Table 3.16-3. The City of Lake Forest considers LOS A through D to be acceptable for all intersections except Critical Intersections (as defined in the General Plan) where LOS "E" (peak hour V/C ratio less than or equal to 1.00) is acceptable. Mitigation of the project contribution is required to bring the intersection back to acceptable level of service or to no-project conditions if project contribution to the ICU is greater than 0.01 only for V/C ratios greater than the acceptable level of service.

Table 3.16-3
Levels of Service

Level of Service	V/C Ratio Signalized Intersections	Delay Value (seconds) Unsignalized Intersections
A	0.0 to 0.599	0.0 to 10.0
B	0.6 to 0.699	> 10.0 to 15.0
C	0.7 to 0.799	> 15.0 to 25.0
D	0.8 to 0.899	> 25.0 to 35.0
E	0.9 to 0.999	> 35.0 to 50.0
F	1.0 and over	> 50.0

All study area intersections are currently operating at acceptable LOS C or better; LOS, and V/C ratios or delay values for study area intersections are shown in Table 1 of the Traffic Impact Analysis included as Appendix G of this Initial Study.

Sidewalks

There are existing sidewalks on both sides of Peachwood and on both sides of Trabuco Road.

Bicycle Lanes

There are existing Class II (striped and signed) bicycle lanes on both sides of Trabuco Road in the study area. There are Class II bicycle lanes on both sides of Lake Forest Drive beginning one block south and one block north of the intersection with Trabuco Road and extending to the north and south, respectively, away from Trabuco Road.

Public Transit

Orange County Transportation Authority (OCTA) public transit bus routes serving the study area are described below in Table 3.16-4.

Table 3.16-4
OCTA Bus Routes Serving Study Area

Route	General Direction of Travel	Operation		
		Roadways in Study Area	Days per Week	Frequency
177	North-South from Lake Forest to Laguna Hills	Lake Forest Drive	Seven days	45 minutes
188	Loop route serving Lake Forest, Irvine, Laguna Hills, and Laguna Woods	Trabuco Road	Monday-Friday	45-50 minutes
206	Northwest-Southeast from Santa Ana to Lake Forest	Bake Parkway	Monday-Friday peak hours only	30 minutes
480	East-West from Lake Forest to Irvine Transportation Center	Bake Parkway	Monday-Friday peak hours only	20+ minutes

Source: OCTA 2011

Estimated Project Traffic Generation

Project trip generation was estimated using trip generation factors from *Trip Generation*, 8th Edition, published by the Institute of Transportation Engineers in 2008, and is shown below in Table 3.16-5.

Table 3.16-5
Project Trip Generation

Land Use	AM Peak Hour		PM Peak Hour		Daily	
	Generation Rate	Trips	Generation Rate	Trips	Generation Rate	Trips
Detached Single-Family Residential, 85 units	0.75	64	1.01	85	9.57	813

Source: Kunzman 2012

Project trip generation was distributed onto the study area roadway network based on existing traffic distribution in the study area and on estimated traffic impacts of future related developments. Trips leaving the project site would take Peachwood to Trabuco Road, where 45 percent of trips are forecast to turn west and 55 percent to turn east.

Assessment of Project Traffic Impacts

Direct traffic impacts are evaluated by comparing existing conditions to existing plus project conditions, as required pursuant to the appellate court ruling in *Sunnyvale West Neighborhood Association vs. City of Sunnyvale* (190 Cal.App.4th 1351 [2010]). Cumulative traffic conditions are evaluated by comparing forecast future year traffic conditions in without-project and with-project scenarios.

Existing Plus Project Conditions

In existing plus project conditions all intersections are forecast to operate at acceptable LOS A through C; LOS, and V/C ratios or delay values for study area intersections are shown in Table 3 of the Traffic Impact Analysis. Thus, no significant direct project impacts would occur. There are no new impacts.

Opening Year (2015) Without-Project Conditions

Opening year (2015) traffic conditions were estimated by adding an areawide growth rate of 1.46 percent annually for four years to existing traffic volumes; the areawide growth rate is used in the City of Lake Forest Traffic Analysis Model. The project is included and its impacts are mitigated by the LFTM; therefore, project traffic was deducted from intersection traffic models in obtaining estimates for 2015 without-project traffic conditions. 2015 without-project intersection LOS are shown in Table 4 of the Traffic Impact Analysis. All intersections would operate at acceptable LOS C or better.

Opening Year (2015) With-Project Conditions

Opening year 2015 with-project traffic conditions were forecast by adding estimated project trip generation and distribution to traffic volumes in 2015 without-project traffic conditions. All intersections would operate at acceptable LOS C or better. 2015 with-project LOS for all study area intersections are shown in Table 5 of the Traffic Impact Analysis.

Peachwood Vacation and Offsite Improvements

A portion of Peachwood is proposed to be reconfigured into the design of the future residential development. Beginning with the intersection of Peachwood and Palmwood, the street and sidewalk would taper to the west away from the existing retaining wall. The City's public easement over a portion of the right-of-way segment of Peachwood (north of the intersection of Peachwood and Tamarisk) would be fully vacated and replaced with a local private residential street and portions of new residential lots. The reconfigured roadway south of Tamarisk would allow new landscaped areas to be added adjacent to Peachwood. It would also result in a reduction in lanes. Instead of two lanes traveling in both directions, southbound Peachwood would transition from one travel lane to two (with a left turn lane onto Palmwood), and northbound Peachwood would consist of one travel lane and one left turn lane onto Tamarisk. Sidewalks would be included in the Peachwood street section, adjusted to reflect the reconfigured roadway. As shown in Figure 3, Aerial Photograph, Peachwood is currently a dead-end street terminating at the project site, consistent with the General Plan's Circulation Element. The reconfigured street would be consistent with the Circulation Element because it would provide access to, but not beyond, the project site. The removal of the City's public easement over the right-of-way and the reconfiguration of the street would not preclude vehicular or pedestrian access compared to existing conditions. Although reconfigured, Peachwood (as well as project streets and sidewalks) would still be accessible to area residents walking, biking or driving. The removal of the City's public easement over the right-of-way and the reconfiguration of the street would not conflict with adjacent land uses, limit access or conflict with adopted plans; therefore there are no new impacts.

Cumulative Impacts

All intersections would operate at acceptable LOS in 2015 with-project and without-project conditions. Project-generated traffic would not contribute to a significant cumulative traffic impact in either the AM or PM peak hours. There are no new impacts.

Impacts to Pedestrian Facilities

The project would install sidewalks on each side of all proposed streets; the project would have no adverse impact on the safety or performance of pedestrian facilities.

Impacts to Bicycle Facilities

The proposed project's 85 residential units would result in a population increase of approximately 248 persons. Some of these new residents would utilize existing bicycle lanes. The project does not propose any modification to existing bicycle lanes on Trabuco Road and Lake Forest Drive. The limited number of new residents riding bicycles would not impede the safety or performance of existing bicycle lanes and would not cause any new impact leading to deterioration of bicycle facilities.

Impacts to Public Transit

The project would have no adverse impact on public transit services in the study area.

b) 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?

No New Impacts. The Congestion Management Program (CMP) in effect in Orange County was issued by the Orange County Transportation Authority (OCTA) in December 2009. All freeways and toll roads,

and selected arterial roadways, in Orange County are designated elements of the CMP Highway System. The nearest CMP roadway to the project site is Trabuco Road.

The CMP requires traffic impact analyses for project impacts to CMP highways for all development projects adjacent to a CMP roadway that would generate 2,400 or more daily trips and all development projects providing direct access to a CMP roadway that would generate 1,600 or more daily trips (OCTA 2009). The project site would not provide direct access to a CMP roadway and would not generate 2,400 trips per day; thus, analysis of impacts to CMP roadways is not required, and impacts would be less than significant. There are no new impacts.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The project would not change air traffic patterns; the nearest public-use airport to the site is John Wayne Airport about 10 miles west of the site. The project would not substantially change air traffic levels at John Wayne Airport. No hazards related to air traffic would occur. There are no new impacts.

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

No Impact. The project would not add incompatible uses such as farm equipment. All proposed roadways would be local streets with speed limits of 25 miles per hour. All proposed intersections would be perpendicular; intersections would be spaced adequately such that traffic conflicts between drivers at separate intersections would not be created. Stopping sight distance standards for intersections are provided in Table 201.1 of the Caltrans Highway Design Manual updated in 2010 (Caltrans 2010). The sight stopping distance for 25 miles per hour is 150 feet. The project is compliant with the stopping distance criteria. According to City of Lake Forest, adequate stopping sight distances would be provided at each proposed intersection (see PW Memo, Appendix G). No impact would occur.

e) Result in inadequate emergency access?

No Impact. Emergency access requirements are contained in Section 503 of the California Fire Code (CFC; California Code of Regulations, Title 24, Part 9). Approved fire apparatus access roads are required within 150 feet of all portions of the exterior walls of the first story of each building. Such roads must be at least 20 feet wide, have 13 feet six inches of vertical clearance, and must provide all-weather driving capabilities for fire apparatus. Each proposed residential lot would be located along a proposed roadway or along Peachwood; the site plan provides access roads meeting CFC requirements. No impact would occur.

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

No Impact. No adverse impacts to sidewalks, bicycle lanes, or public transit bus services would occur, as substantiated above in Section 3.16.a.

g) Cause the ICU (intersection capacity utilization) values at intersections, with the proposed project, to exceed the City of Lake Forest performance criteria as specified in Table C-3 of the General Plan Circulation Element?

No Impact. No significant impacts to intersection operation would occur, as substantiated above in Section 3.16.a.

h) Include design features or uses that may cause traffic hazards such as sharp curves, tight turning radii from streets, limited roadway visibility, short merging lanes, uneven road grades, or any other conditions determined by the City traffic engineer to be a hazard?

No Impact. No design hazards would occur, as substantiated above in Section 3.16.d. There are no new impacts.

i) Provide less parking than required, applying the standards found in the City of Lake Forest Municipal Code?

No Impact. The City of Lake Forest Municipal Code Section 9.16.030 requires the following parking for single-family residential units:

- Two covered off-street spaces
- One additional space for dwellings with driveways less than 17 ft.; may be on-street within 200 ft. of dwelling
- 0.2 guest spaces

Required parking for the project per the Municipal Code totals 2.2 spaces per unit x 85 units, or 187 spaces.

The project would provide a total of 270 parking spaces: two in a garage plus 100 on-street parking spaces. Parking provided would meet the City requirement, and no new adverse impact would occur.

3.17 UTILITIES AND SERVICE SYSTEMS

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies (PPPs) that apply to the proposed project and will help to reduce and avoid potential impacts related to utilities and service systems:

PPP USS-1 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Utilities/Service Systems*) Compliance with Source Reduction and Recycling Element for solid waste reduction.

PPP USS-2 (*OSA PEIR MMRP Standard Conditions and Legal Requirements for Utilities/Service Systems*) Compliance with Title 24, California's Energy Efficiency Standards for Residential and Non-Residential Buildings.

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No New Impact. The project would not generate wastewater, such as that discharged from large manufacturing and agricultural operations, requiring treatment other than that provided at municipal

wastewater treatment plants. Requirements governing discharges to municipal storm drain systems in the part of Orange County within the Santa Ana River watershed are set forth in Order No. R8-2009-0030 issued by the SARWQCB in 2009. The project would comply with requirements of the aforementioned Order through preparation and implementation of a WQMP; BMPs specified in the WQMP are discussed in detail above in Section 3.9m. The project would not exceed wastewater treatment requirements of the SARWQCB, and no impact would occur.

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

No Impact.

Water Treatment

IRWD provides water service to the project area. Water treatment facilities filter and/or disinfect water before it is delivered to customers. The OSA PEIR concluded that there are adequate existing and planned water treatment facilities for forecast water demands by the OSA projects, and impacts to water treatment capacity would be less than significant. The proposed project would develop 85 residential units on the site, the same number that was analyzed for the site in the OSA PEIR. The project would not cause any increase in water demands, and thus would not create any increase in demand for water treatment capacity, compared to that analyzed in the OSA PEIR. No new impact would occur.

Wastewater Treatment

The OSA PEIR concluded that there is adequate existing wastewater treatment capacity for forecast wastewater generation by the OSA projects at the Irvine Ranch Water District's Los Alisos Water Reclamation Plant, and impacts to water treatment capacity would be less than significant. The proposed project would develop 85 residential units on the site, the same number that was analyzed for the site in the OSA PEIR. The project would not cause any increase in wastewater generation, and thus would not create any increase in demand for wastewater treatment capacity, compared to that analyzed in the OSA PEIR. No new impact would occur.

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?

No New Impact. The project would build a system of storm drains onsite, including a 72-inch storm drain pipe that would function as a stormwater detention facility. The impacts of construction of storm drains would be part of the impacts of the whole project analyzed throughout this Initial Study and the OSA PEIR, including Section 3.4, *Biological Resources*, 3.6, *Geology and Soils*, and 3.9, *Water Resources*. All impacts can be mitigated to less than significant. Impacts of construction of storm drainage facilities were not analyzed in Section 3.15, *Utilities/Service Systems*, of the OSA PEIR but were instead addressed in Section 3.8, *Hydrology/Water Quality*. Drainage, hydrology, and grading impacts were found to be less than significant after mitigation in the OSA PEIR. No new significant impacts would result from construction of proposed storm drains and no further analysis of utilities impacts regarding construction of storm drains is required.

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

No New Impact. The OSA PEIR concluded that there are adequate existing water supplies for forecast water demands by the OSA projects, and impacts to water supplies would be less than significant. The project-related demand for potable water was addressed in the water supply assessment completed by IRWD in 2005 (IRWD 2005) for the OSA PEIR. Since the OSA PEIR assumed a build-out of 85 detached single-family units on the project site, the proposed project would be within the scope of the WSA. In June 2011 IRWD adopted their 2010 Urban Water Management Plan (UWMP). The UWMP addresses water supply and demand, conservations measures and water recycling within IRWD's service area. The 2010 UWMP uses the City of Lake Forest's General Plan land use designations as the basis for determining demand. The proposed project is already included in the City's General Plan. The UWPM indicates that IRWD's supplies remain constant in normal, single-dry and multiple-dry years through 2035. (IRWD UWMP, Table 35) Therefore, no new impacts to water supplies are expected to occur as a result of the proposed project.

e) Result in a determination by the wastewater 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?

No Impact. As discussed in Section 3.17b, the proposed project would not result in any new demand for wastewater treatment capacity compared to that identified in the OSA PEIR.

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

No New Impact. Project implementation would increase solid waste generation. Waste Management provides solid waste collection and disposal to the City. Solid waste collection service to the project site would be extended through existing service agreements/contracts. According to the OSA PEIR, solid waste from the project site would be hauled to one of three landfills: Frank R. Bowerman Landfill; Olinda Alpha Landfill; or Prima Descheca Landfill. The OSA PEIR determined that the existing landfills serving Orange County have adequate capacity for estimated solid waste generation by the OSA projects, and landfill capacity impacts would be less than significant. The proposed project would develop 85 residential units on the project site, the same number as analyzed in the OSA PEIR. The impact to landfills was fully analyzed and/or mitigated in the prior OSA PEIR and no new or different impacts will result from the proposed activity. Therefore, there are no new impacts.

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

No New Impact. No impact to regulations governing solid waste disposal was identified in the OSA PEIR. As stipulated in the PEIR (included as PPP USS-1) the proposed project would be required to comply with AB 939[8] and with Chapter 16 of the City of Lake Forest Municipal Code. No new impact to regulations governing solid waste disposal would occur.

[8] California Public Resources Code, Sections 40000 et seq.

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

No New Impact. This Initial Study demonstrates that the proposed project does not degrade the quality of the environment, reduce habitat for wildlife species, or endanger threatened plant and animal species. With implementation of existing regulations, PPP's, PDF's, OSA mitigation measures, and project specific mitigation measures, impacts remain less than significant. There are no new significant impacts.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

No New Impact. With implementation PPP's, PDF's, OSA mitigation measures, and project specific mitigation measures of the proposed project, changes in traffic, noise, and air quality due to the project would not result in significant short-term or long-term, impacts to offsite uses. There are no new impacts.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

No New Impact. The proposed 85 unit single-family project was adequately addressed in the OSA PEIR and the impacts were fully analyzed and/or mitigated in the prior OSA PEIR. No new or different impacts will result from the proposed project.

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5. List of Preparers

LEAD AGENCY

Ms. Gayle Ackerman, Director of Development Services

Ms. Cheryl Kuta, Planning Manager

Mr. Ron Santos, Senior Planner

THE PLANNING CENTER

Mr. William Halligan, Vice President, Environmental Services

Ms. Konnie Dobreva, Senior Planner

Ms. Nicole Vermillion, Senior Planner

Mr. Fernando Sotelo, Senior Planner

Mr. Michael Milroy, Associate Planner

Mr. Ryan Potter, Assistant Planner

Mr. Cary Nakama, Graphic Artist

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