PUBLIC REVIEW DRAFT

Serrano Summit

Area Plan 2009-01 and Tentative Tract Map No. 17331

Initial Study/Environmental Checklist

APRIL 29, 2011

Prepared for:
City of Lake Forest

Prepared by:
RBF Consulting

Public Review Draft

Initial Study/Environmental Checklist

Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331

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April 29, 2011

JN 10-107199

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This CD contains the Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 Initial Study/Environmental Checklist Technical Appendices. The Opportunities Study Program EIR and associated Technical Appendices can be found on the City of Lake Forest web site at:

http://www.lakeforestca.gov/depts/ds/planning/op_study/peir.asp

1.0 INTRODUCTION

The proposed Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 encompass approximately 98.9 acres, generally situated to the east of Bake Parkway, south of Commercentre Drive, and west of Serrano Creek, in the City of Lake Forest, California. The "proposed project" analyzed in this Initial Study would allow for the development of residential, and park and recreation uses, a Civic Center, and existing and future Irvine Ranch Water District public facilities. The "project Alternative" that is analyzed would exclude the Civic Center, allowing in its place the development of additional residential uses. Refer to Section 2.0, *Project Description*, for a detailed description.

The project site (subject of this Initial Study) is part of the larger *Opportunities Study Area* (OSA) and is one of several properties, which were systematically analyzed by the City for land use changes from industrial, business park, and commercial to residential uses. These land use changes (General Plan Amendment 2008-02 and Zone Changes 2008-01 through 2008-05) were approved by the City as a result of the closure of the El Toro Marine Corps Air Station (El Toro MCAS). It is noted that these entitlement numbers refer to the entire OSA, while GPA 2008-02C and Zone Change 2008-03 refer specifically to the project site (subject of this Initial Study). Prior to approval of these land uses changes, the City initiated an *Opportunities Study* in order to examine the impacts and benefits of land use changes proposed by the City. The *City of Lake Forest Opportunities Study Final Program Environmental Impact Report* (OSA PEIR), dated May 23, 2008, was prepared to consider the potential environmental impacts that would result from implementation of General Plan Amendment 2008-02 and Zone Changes 2008-01 through 2008-05.

Per Section 15168(d) of the *CEQA Guidelines*, the Program EIR can be used to simplify the task of preparing environmental documents on later parts of the program. The program EIR provides the basis in an Initial Study for determining whether the later activity may have any significant effects; and be incorporated by reference to deal with regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole.

The OSA PEIR, which included analyses for General Plan Amendment 2008-02C and Zone Change 2008-03 for the project site (as Site 3), was certified in June 2008. Note that the OSA PEIR is provided in portable document format (PDF) on the enclosed compact disk, and is available in hard copy format at the City of Lake Forest. General Plan Amendment 2008-02C and Zone Change 2008-03 were approved by the City Council in July and August 2008. A Development Agreement was subsequently signed in August 2008.

Following preliminary review of the proposed project, the City of Lake Forest has determined that Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 are subject to the guidelines and regulations of CEQA. This Initial Study will address the project specific direct, indirect, and cumulative environmental effects that were not considered in the OSA PEIR, as this Initial Study tiers from the OSA PEIR.

1.1 STATUTORY AUTHORITY AND REQUIREMENTS

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 Environmental Impact Report (EIR) would be required for the proposed Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 project.

1.2 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).

When an EIR has been prepared and certified for a program or plan consistent with CEQA's tiering requirements, a Lead Agency, should, for a later project pursuant to or consistent with the program or plan, limit the EIR on the later project to effects that were not examined as significant effects on the environment in the prior EIR. In those situations where a programmatic document does not specifically address and analyze the impacts and mitigation measures necessary for a project-level action, the project-level environmental review can be streamlined by tiering from the program-level documents. Agencies are encouraged to tier their CEQA analysis to avoid repetition of issues and to focus on the issues for decision at each level of review. Subsequent CEQA compliance involves either the preparation of an EIR or Negative Declaration.

For purposes of tiering, significant environmental effects have been "adequately addressed" if the Lead Agency determines that the significant environmental effects:

- Have been mitigated or avoided as a result of the prior EIR and adopted findings in connection with that prior EIR; or

- Have been examined at a sufficient detail in the prior EIR to enable those effects to be mitigated or avoided by site-specific revisions, the imposition of conditions, or by other means with the approval of the later project.

Where appropriate, this Initial Study tiers off the OSA PEIR. As discussed above, under *CEQA Guidelines* Section 15152, tiering is appropriate when the sequence of analysis follows from an EIR prepared for a general plan, policy, or program to an EIR of lesser scope, or to a site-specific EIR. Under CEQA, the OSA PEIR is considered a first tier document and this Initial Study for the proposed project is considered a second tier document. While a second tier analysis can rely on a first tier analysis, it has the obligation to discuss any changed circumstances or new information that might alter the first tier analysis. Accordingly, this Initial Study will focus its analysis on changes to the project or the surrounding circumstances that may have occurred since the City of Lake Forest certified the OSA PEIR. Under principals of tiering, if a first tier document found significant impacts, then the second tier EIR must require implementation of the first tier mitigation measures unless the analysis explains that the measures are not applicable or that other mitigation measures can replace the previous measures and similarly reduce the impacts to a level of insignificance. The OSA PEIR determined that the following significant and unavoidable impacts for Site 3 (the project site) would occur with implementation of the General Plan Amendment 2008-02C and Zone Change 2008-03:

- Light and glare;
- Existing zoning for agricultural use;
- Threshold exceedances established by the SCAQMD and cumulative considerations for air quality;
- Water quality of receiving waterbodies for pesticides only;
- Cumulative long-term (2030 General Plan buildout) conditions for noise; and
- Inducing substantial population growth.

All other impacts were found to be less than significant through the existing standards, regulations, and/or mitigation measures imposed under the PEIR.

1.3 INITIAL STUDY

The purpose of this Initial Study is to inform the City of Lake Forest decision-makers, affected agencies, and the public of potential environmental impacts associated with construction and implementation of the proposed project. Following completion of the Initial Study, the City of Lake Forest will make a formal determination as to whether the project may or may not have significant unmitigable environmental impacts. A determination that a project may have less than significant effects would result in the preparation of a Negative Declaration. A determination that a project may have significant impacts on the environment would require the preparation of an EIR to further evaluate issues identified in this Initial Study.

Based upon the potential environmental effects identified by applicant technical studies, the City of Lake Forest will require preparation of an EIR to further evaluate issues identified in this Initial Study. Therefore, this Initial Study and Notice of Preparation (NOP) serve as part of the scoping process to determine the appropriate environmental documentation for the project. As indicated in Section 3.3, *Lead Agency Determination*, the Lead Agency has determined that the proposed project may have a significant effect on the environment and that preparation of an EIR is required.

The Initial Study and NOP will undergo a 30-day public review period. During this review, comments by the public and responsible agencies on the project relative to environmental issues are to be submitted to the City of Lake Forest. The City will review and consider all comments as a part of the project's environmental analysis, as required in Section 15082 of the *CEQA Guidelines*, as amended. The comments received with regard to this NOP and Initial Study will be included in the project environmental document, for consideration by the City of Lake Forest.

1.4 CONSULTATION

In accordance with Section 15063 of the *CEQA Guidelines*, as soon as the Lead Agency has determined that an Initial Study will be required for the project, the Lead Agency is directed to consult informally with all Responsible Agencies and Trustee Agencies that are responsible for resources affected by the project, in order to obtain the recommendations of those agencies on the environmental documentation to be prepared for the project. Following receipt of any written comments from those agencies, the City of Lake Forest will consider any recommendations of those agencies in the formulation of the preliminary findings. Following execution of this Initial Study, the City of Lake Forest will initiate formal consultation with these and other governmental agencies as required under CEQA and its implementing guidelines.

Responsible and Trustee Agencies and other entities in addition to the City of Lake Forest (Lead Agency), which may use this Initial Study/Environmental Checklist in their decision-making process or for informational purposes include, but may not be limited to, the following:

- California Regional Water Quality Control Board;
- County of Orange Public Works;
- County of Orange Environmental Management Agency;
- Irvine Ranch Water District;
- Orange County Fire Authority;

- Orange County Health Department;
- Orange County Sheriff's Department;
- Orange County Transit Authority;
- South Coast Air Quality Management District;
- Southern California Association of Governments;
- State of California Department of Fish and Game;
- State of California Department of Transportation;
- State Water Resources Control Board;
- U.S. Army Corps of Engineers; and
- U.S. Fish and Wildlife Service.

1.5 INCORPORATION BY REFERENCE

The following references were utilized during preparation of this Initial Study. These documents are available for review at the City of Lake Forest Development Services Department, Planning Division, located at 25550 Commercentre Drive, Suite 100, Lake Forest, California, 92630.

- *City of Lake Forest General Plan* (General Plan), June 21, 1994 and Amended on July 1, 2010. The City of Lake Forest General Plan (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 decision. 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 (Lake Forest MEA) and the General Plan Master Environmental Impact Report (Master EIR). 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 data.

- *City of Lake Forest Municipal Code* (Municipal Code). The Municipal Code (codified through Ordinance No. 202, passed January 19, 2010 [Supplement No. 13]) consists of all the regulatory, penal, and administrative ordinances of the City of Lake Forest. It is

the method the City uses to implement control of land uses, in accordance with General Plan goals and policies. The City of Lake Forest Zoning Code (Title 9 of the Municipal Code) (Zoning Code) identifies land uses permitted and prohibited according to the zoning category of particular parcels. The Zoning Code is referenced throughout this Initial Study for descriptions and requirements of the City's regulatory framework.

- *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.

- *City of Lake Forest Opportunities Study Final Program Environmental Impact Report* (OSA PEIR), dated May 23, 2008, certified June 3, 2008. 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 five 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 3 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 potential environmental effects of the *Opportunities Study* (which includes the project site). The Notice of Preparation (NOP) identified potentially significant impacts on the following issue areas associated with the construction and/or operation of the *Opportunities Study*, which are as follows:

  - Aesthetics and Visual Resources (significant and unavoidable impacts for Site 3);
  - Agricultural Resources (significant and unavoidable impacts for Site 3);
  - Air Quality (significant and unavoidable impacts for Site 3);
  - Biological Resources;
  - Cultural Resources;
  - Geology/Soils and Mineral Resources;
  - Greenhouse Gas Emissions;
  - Hazards and Hazardous Materials;
  - Hydrology/Water Quality (significant and unavoidable impacts for Site 3);
  - Land Use/Planning;
  - Noise (significant and unavoidable impacts for Site 3);

- Population/Housing (significant and unavoidable impacts for Site 3);
- 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*.

Pursuant to OSA PEIR Table 2-5, *Project Summary*, the OSA PEIR analyzed the development of a maximum of 833 dwelling units and a neighborhood park (conceptual) on Site 3 (the project site). The OSA PEIR concluded that the following significant and unavoidable impacts for Site 3 would occur with implementation of General Plan Amendment 2008-02C and Zone Change 2008-03:

- Aesthetics (Light and glare);
- Agricultural (Existing zoning for agricultural use);
- Air Quality (Threshold exceedances established by the South Coast Air Quality Management District and cumulative considerations for air quality);
- Hydrology (Water quality of receiving waterbodies for pesticides only);
- Noise (Cumulative long-term (2030 General Plan buildout) conditions for noise); and
- Population and Housing (Inducing substantial population growth).

All other impacts for Site 3 were found to be less than significant through the existing standards, regulations, and/or mitigation measures imposed under the OSA PEIR.

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The site for the proposed Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 (the project) is located in the City of Lake Forest, California. The City of Lake Forest is located in southern Orange County, between Los Angeles and San Diego Counties, on the east side of Interstate 5 (I-5); refer to Exhibit 2-1, *Regional Vicinity*. The 98.9-acre project site is located to the north of the Serrano Highlands residential neighborhood, south of Commercentre Drive, east of Bake Parkway, and west of Serrano Creek; refer to Exhibit 2-2, *Site Vicinity*. Vehicular accesses to the site are currently available via gated and pre-authorized access points at Biscayne Bay Drive and Wisteria Lane.

2.2 ENVIRONMENTAL SETTING

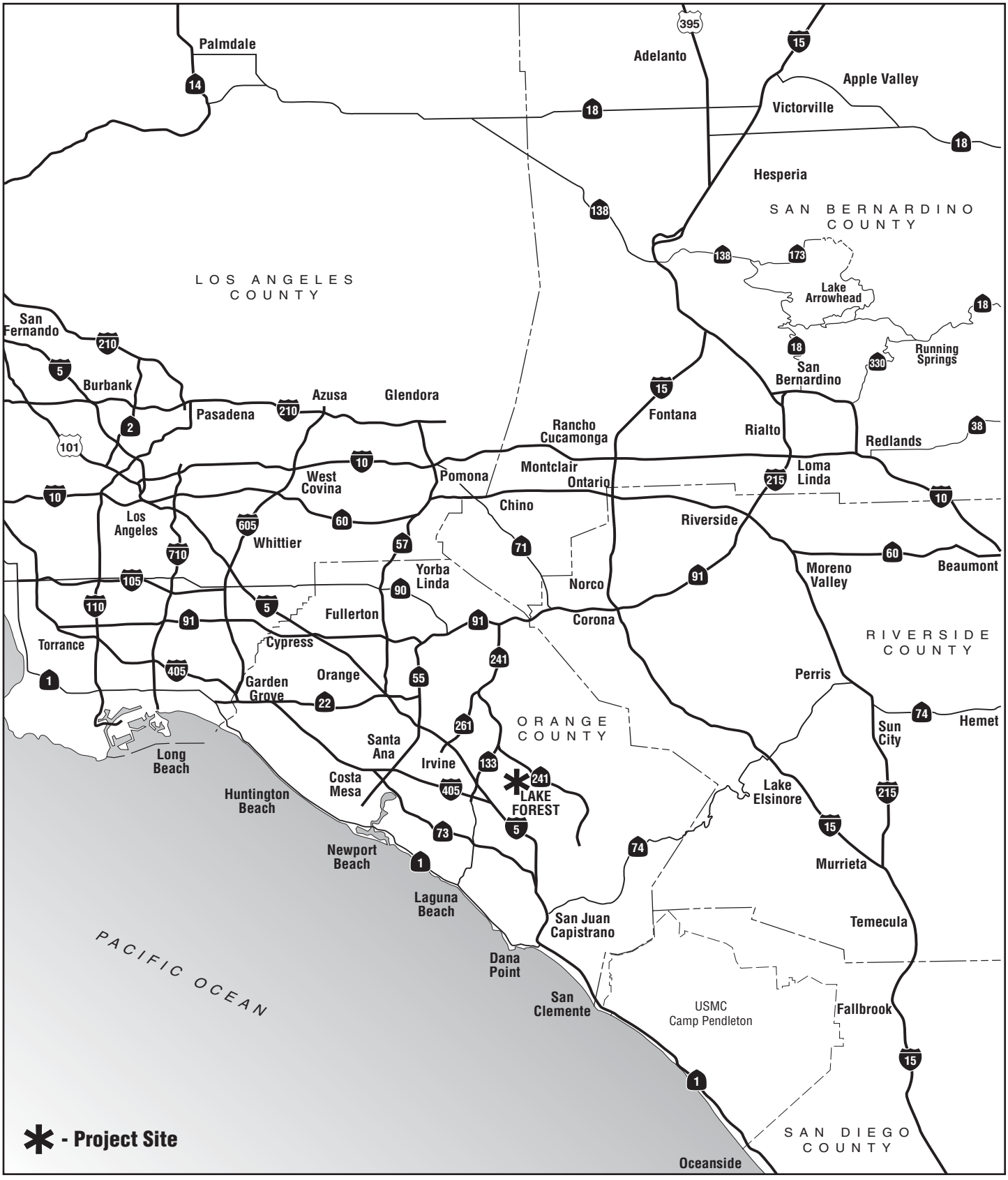
EXISTING ON-SITE CONDITIONS

The project site has historically been used for both agricultural purposes and water storage and treatment uses. The property was owned by the Los Alisos Water District (LAWD) until 2001, when it was acquired by the Irvine Ranch Water District (IRWD). Currently, the project site is largely undeveloped with the exception of the on-going IRWD uses at the south end of the property; refer to Exhibit 2-3, *Aerial Photograph*. The project site slopes south, toward Serrano Creek, and ranges in elevation from approximately 540 to 709 feet above mean sea level (msl).

The existing on-site structures include several administrative and water storage/treatment facilities previously operated by the LAWD; refer to Exhibit 2-4, *Existing Land Uses*. The facilities include the former Baker Filter Treatment Building, two storage buildings, an administrative/office building, two above ground steel water tanks, and two below ground concrete water reservoirs. While the administrative/office building is no longer is use, all of the water storage tanks/reservoirs are currently operated by IRWD to serve domestic or recycled water to the Lake Forest area. There are multiple paved maintenance paths located on-site in association with these uses. These existing paths provide access to the site via Biscayne Bay Drive to the north and Wisteria/Marin to the south.

The on-site vacant land conditions are highly disturbed as a result of past agricultural activities. The on-site riparian vegetation is located along the site's eastern boundary, along Serrano Creek. Also, the Serrano Creek Trail trends in a north/south orientation along Serrano Creek and the site's eastern boundary.

Pursuant to the City's General Plan Land Use Map, the project site is designated "Medium Density Residential" (approximately 82 acres) and "Public Facility" (approximately 17 acres). According to the City's Zoning Map, the project site is zoned "Multi-Family Dwelling with a Planned Development Combining District" (R2-PD) (approximately 82 acres) and "Public Facilities" (approximately 17 acres).



NOT TO SCALE

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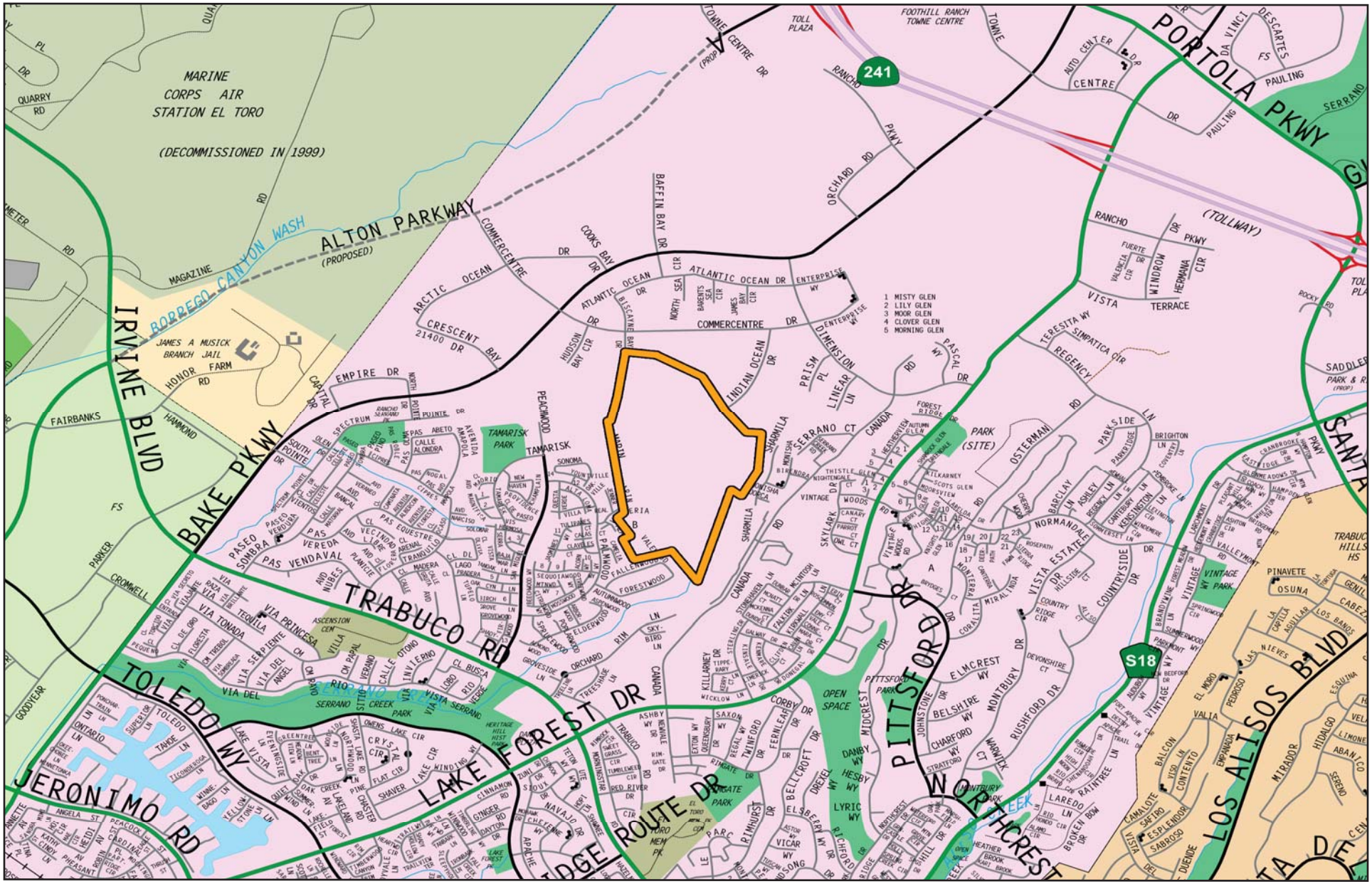
SERRANO SUMMIT AREA PLAN 2009-01 AND
TENTATIVE TRACT MAP NO. 17331
INITIAL STUDY / ENVIRONMENTAL CHECKLIST

Regional Vicinity

Exhibit 2-1



Source: Thomas Brothers Maps, 2009.

- Project Site Boundary

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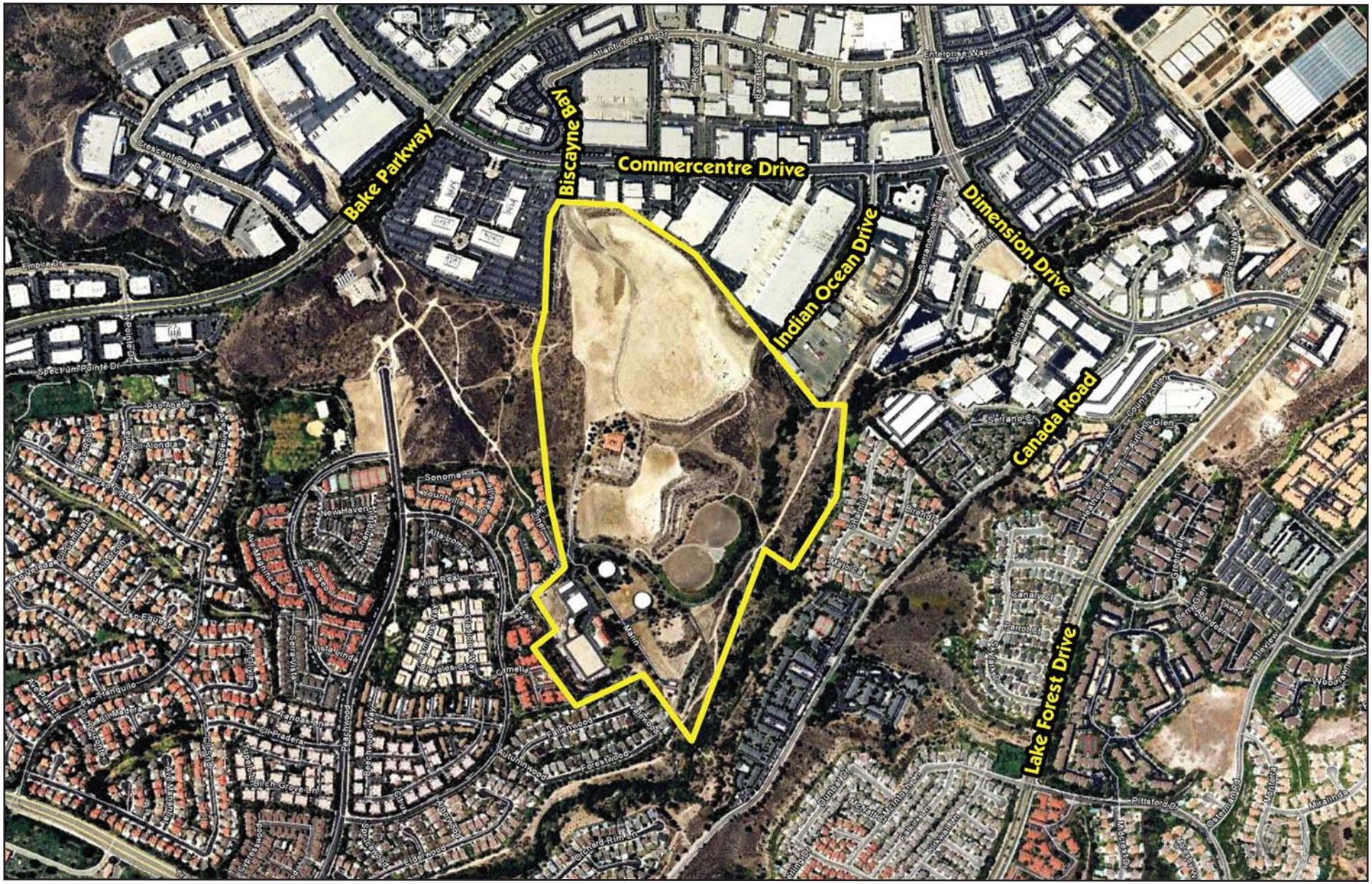
SERRANO SUMMIT AREA PLAN 2009-01 AND
TENTATIVE TRACT MAP NO. 17331
INITIAL STUDY / ENVIRONMENTAL CHECKLIST

Site Vicinity

Exhibit 2-2



Source: Google Maps, 2009.
- Project Site Boundary

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SERRANO SUMMIT AREA PLAN 2009-01 AND
TENTATIVE TRACT MAP NO. 17331
INITIAL STUDY / ENVIRONMENTAL CHECKLIST

Aerial Photograph

Exhibit 2-3

Source: Serrano Summit Area Plan by KTGY Group, Inc., October 2009.

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SERRANO SUMMIT AREA PLAN 2009-01 AND
TENTATIVE TRACT MAP NO. 17331
INITIAL STUDY / ENVIRONMENTAL CHECKLIST

Existing Land Uses

Exhibit 2-4

EXISTING SURROUNDING LAND USES

Land uses surrounding the project site include the following:

North: Light industrial uses are located to the north of the project site. Commercentre Drive trends in an east/west orientation to the north. The General Plan land use designations to the north are Light Industrial. The zoning to the north includes Pacific Commercentre Planned Community-Light Industrial (LI) and Light Industrial (M1).

East: Serrano Creek is located east of the project site and trends in a north/south orientation east of the Serrano Creek Trail. Serrano Creek, a single-family residential neighborhood, and two condominium neighborhoods are located further to the east, beyond Serrano Creek. The General Plan designations to the east include Regional Park/Open Space, Low Density Residential (2 to 7 du/net acre), and Low-Medium Density Residential (7 to 15 du/net acre). The zoning includes General Agriculture (A1), Group Dwelling Planned Development (R2-PD), Residential Single-Family (RS), and Heavy Density Residential (HEDR).

South: The Serrano Highlands residential neighborhood and Serrano Creek are situated to the south of the project site. The General Plan designations to the south include Low Density Residential (2 to 7 du/net acre), Low-Medium Density Residential (7 to 15 du/net acre), and Regional Park/Open Space. The zoning is Open Space (OS), Medium Density Residential (MDR), and Serrano Highlands Planned Community-High Density 1 Residential (HDR-1) and Serrano Highlands Planned Community-High Density 2 Residential (HDR-2).

West: Condominium residential uses, vacant lands, and office/commercial uses (including the existing Lake Forest City Hall) are situated to the west of the project site. The General Plan designations to the west include Low Density Residential (2 to 7 du/net acre), Low-Medium Density Residential (7 to 15 du/net acre), Open Space, and Light Industrial. The zoning to the west include HDR-1 and HDR-2, Open Space, and Pacific Commercentre Planned Community-High Technology (HT).

2.3 BACKGROUND

Due to aircraft flight patterns from the former El Toro Marine Corps Air Station (El Toro MCAS) and resultant noise from aircraft, restrictions were placed on a large swath of land located in the central portion of the City (which includes the project site). This area was formerly contained within the 65 Community Noise Equivalent Level (CNEL) contours and airport crash zones, which restricted development in this portion of the City. As the City developed in the southern and northern portions with residential and commercial development, along with areas of park, trail, and other recreational uses, this land use restricted area was developed with industrial, office, and commercial uses devoid of the open space and trail linkages found in the remainder of the City. Consequently, the land use restrictions effectively segregated the northern and southern portions of the City.

With the decision to utilize the former El Toro MCAS property for non-aviation uses, the restriction on development in the central portion of the City is no longer necessary. The City initiated a series of studies, collectively dubbed the "*Opportunities Study*." The overall purpose of the *Opportunities Study* was to examine the impacts and benefits of changes to the allowed land uses in this land use restricted area. At the outset of the *Opportunities Study*, the City Council developed study objectives. Utilizing the established study objectives as the basis for analysis of the potential land use changes, the City Council approved a phased approach to the *Opportunities Study*. The City accepted conceptual plans from six landowners in the restricted land use area, cumulatively called the "Landowner Concept Plan," which included residential and mixed uses. The land use changes proposed by the landowners were evaluated from planning, traffic, and fiscal perspectives and compared against the industrial and commercial land uses previously allowed under the City's General Plan. Through the *Opportunities Study* process, a "Recommended Plan" was developed for further study. The Recommended Plan for development included seven parcels, with a public facilities overlay applied to a portion of the seventh parcel.

The *City of Lake Forest Opportunities Study Final Program Environmental Impact Report* (OSA PEIR), dated May 23, 2008, was prepared in order to consider potential environmental impacts that would result from implementation of General Plan Amendment 2008-02C and Zone Change 2008-03, among other entitlements, proposed as a result of the Recommended Plan. The OSA PEIR included an analysis of Site 3, which generally comprises the proposed Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 (the subject of this Initial Study). The proposed project was also analyzed as a development concept proposed by Alternative 7 (presented in Final OSA PEIR Chapter 7.4, *Alternative 7 – Hybrid Alternative*).

2.4 PROJECT CHARACTERISTICS

The project proposes the adoption of the Serrano Summit Area Plan 2009-01 (Area Plan[1]) and Tentative Tract Map No. 17731 (Tentative Tract Map). The proposed Area Plan provides for the development of a new community of residential neighborhoods, a Civic Center, parks and recreation facilities, and existing and future public facilities. The Area Plan would establish both regulations and guidelines, which would govern development of the project site. The Area Plan is designed to serve as a "blueprint" for development within the project area by establishing the distribution of land use and the criteria for development of each land use. The Area Plan would also establish the development requirements and guidelines to be applied to each phase of development within the project area.

Exhibit 2-5, *Proposed Master Land Use Plan*, illustrates the land uses planned for the project area. As depicted on Exhibit 2-5, the planned land uses are presented according to Planning Areas (PA). PAs 1 through 13 are planned for residential uses, PAs 14 through 17 are planned for parks and recreation, and PAs 18 and 19 are planned for existing and future IRWD facilities. PAs 1 through 13, which comprise approximately 56.8 acres, are designated Medium Density Residential. PA 13 (approximately 11.9 acres) is also subject to a Public Facilities Overlay, which permits development of a Civic Center. For purposes of this Initial Study, the "proposed project" assumes development of a Civic Center in PA 13, as permitted by the Public Facilities Overlay. The "project alternative" assumes development of residential uses in PA 13, as

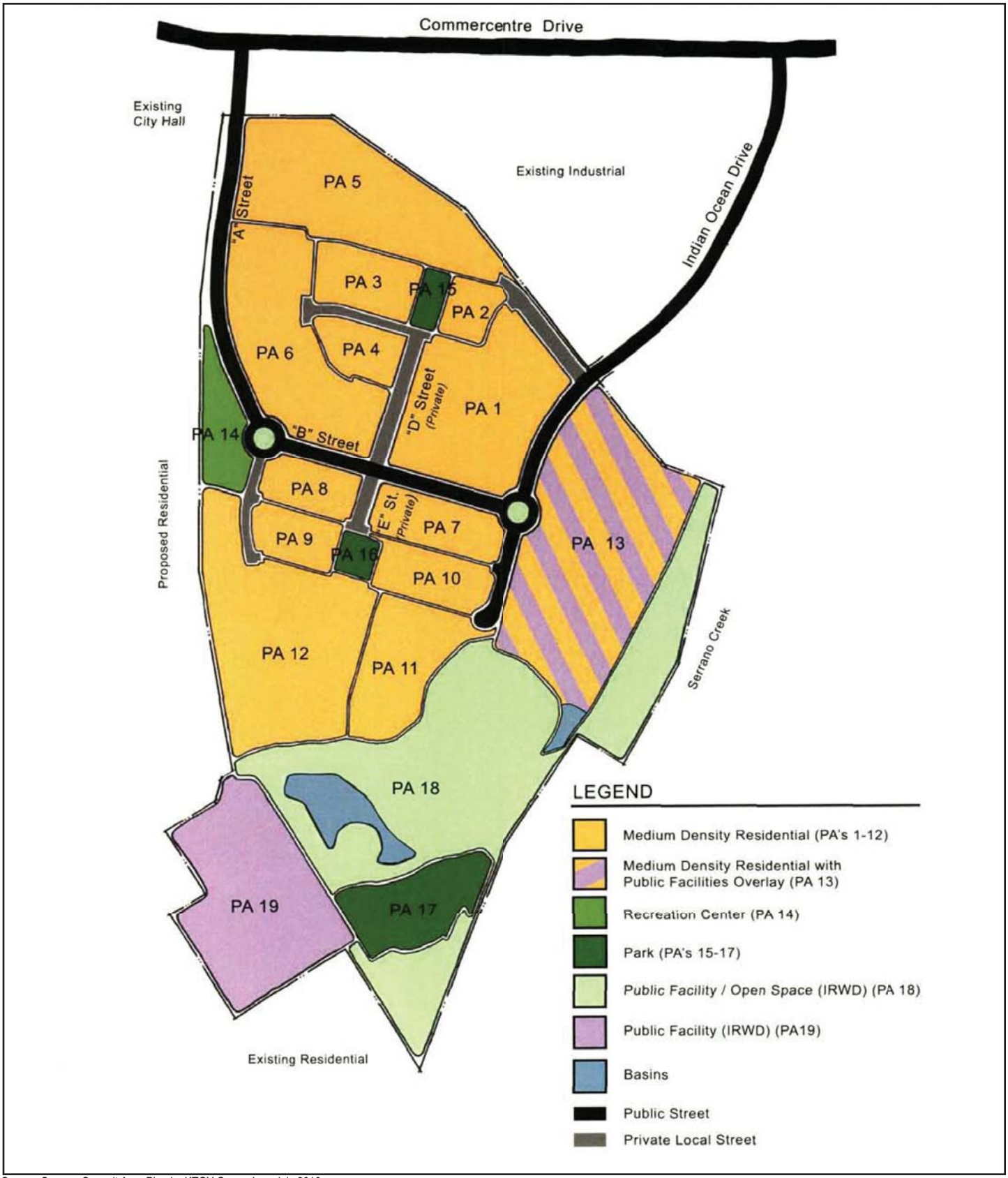
[1] An Area Plan is a broadly focused planning document that takes a long-term view of a particular area and takes into account the local community's preferences on how it should or should not be developed.

permitted by the underlying Medium Density Residential designation. The project alternative would be in following with the Development Agreement, which includes a provision for the construction of residential units in PA 13, in the event the Civic Center is not constructed within a certain time. As to the remaining Planning Areas, there is no variation between the proposed project and the project alternative. Therefore, unless otherwise noted, the project alternative's characteristics and potential impacts with respect to the Area Plan are assumed to be the same as that of the proposed project.

Exhibit 2-6, *Tentative Tract Map No. 17331*, illustrates the Tentative Tract Map, which proposes to divide the project site into 37 lots and provide additional improvements. The Tentative Tract Map proposes Lots 1 through 13 for residential, and 14 through 19 for parks/recreation and existing IRWD facilities. The remainder of the lots consists of private streets and landscaped lots that will be commonly owned and maintained. It is noted, the Tentative Tract Map Lot numbers 1 through 13 coincide with the Planning Area numbers described above. Lot 13 is also subject to a Public Facilities Overlay, which permits development of a Civic Center. For purposes of this Initial Study, the "proposed project" assumes development of a Civic Center on Lot 13, while the "project alternative" assumes development of residential uses on Lot 13. As to the remaining Tentative Tract Map Lots, there is no variation between the proposed project and the project alternative. Therefore, unless otherwise noted, the project alternative's characteristics and potential impacts with respect to the Tentative Tract Map are assumed to be the same as the proposed project's.

SERRANO SUMMIT AREA PLAN

As depicted on Exhibit 2-5 and outlined in Table 2-1, *Area Plan Planning Areas*, the project proposes 19 Planning Areas for future development. The Area Plan would allow the development of Medium Density Residential land uses in PAs 1 through 13), public facility uses (i.e., a Civic Center) in PA 13, recreational uses in PA 14, parks in PAs 15 through 17, IRWD public facilities and open space in PAs 18 and 19. Planning Areas 1 through 13 provide for residential development through future Tract Maps for fee simple lots or condominium subdivisions for a maximum of up to 833 dwelling units. Planning Area 13, an approximately 11.9-acre site, also includes a Public Facilities Overlay for the development of a Civic Center (proposed project). It is the IRWD's intent to retain ownership and continue the use of Planning Areas 18 and 19 for existing and future water utility operations.



Source: Serrano Summit Area Plan by KTGY Group, Inc., July 2010.

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SERRANO SUMMIT AREA PLAN 2009-01 AND
TENTATIVE TRACT MAP NO. 17331
INITIAL STUDY / ENVIRONMENTAL CHECKLIST

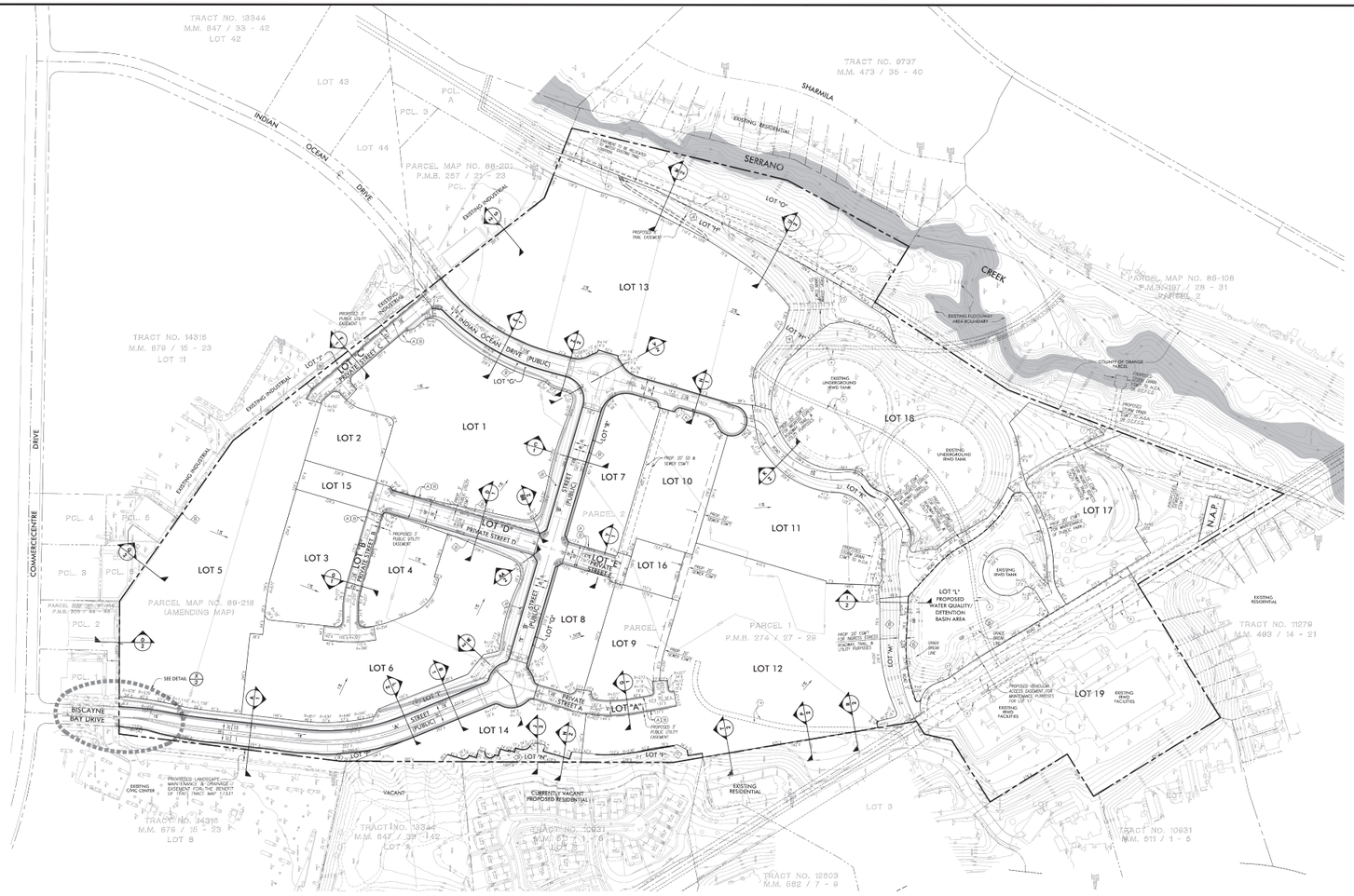
Proposed Master Land Use Plan

Exhibit 2-5

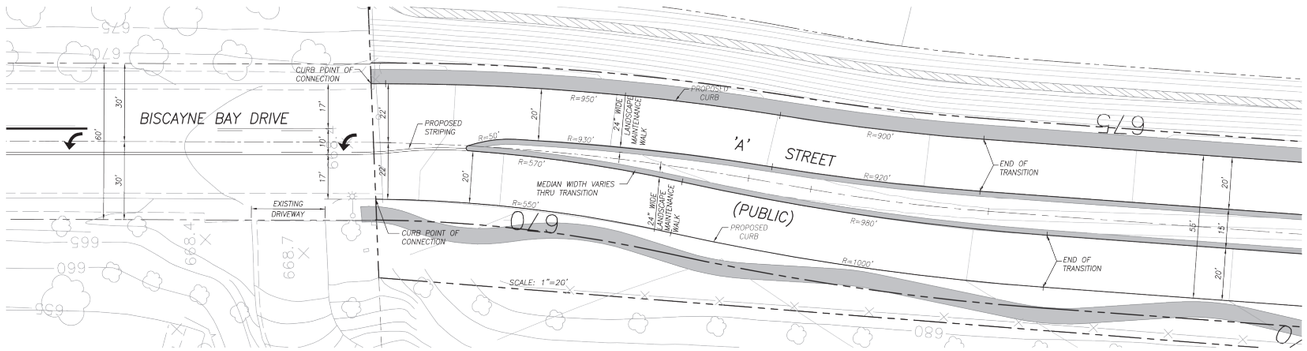
PROPOSED EASEMENTS:

(A) EASEMENT FOR PIPELINES AND ACCESS FOR I.R.W.D.

(B) EASEMENT FOR EMERGENCY ACCESS & PUBLIC SERVICE FOR THE CITY



TRANSITION DETAIL
BISCAYNE BAY DRIVE TO 'A' STREET



Source: Fuscoe Engineering, July 9, 2010.

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SERRANO SUMMIT AREA PLAN 2009-01 AND
TENTATIVE TRACT MAP NO. 17331
INITIAL STUDY / ENVIRONMENTAL CHECKLIST

Tentative Tract Map No. 17331

Exhibit 2-6

Table 2-1
Area Plan Planning Areas

Planning Area	Land Use	Proposed Project		Project Alternative	
		Gross Acres	Maximum Allowed DU/PA[1]	Gross Acres	Maximum Allowed DU/PA[1]
1	Medium Density Residential (MDR)	6.9	173	6.9	173
2		1.0	25	1.0	25
3		2.0	50	2.0	50
4		1.4	35	1.4	35
5		7.1	178	7.1	178
6		6.6	165	6.6	165
7		1.8	45	1.8	45
8		1.5	37	1.5	37
9		1.5	38	1.5	38
10		2.2	55	2.2	55
11		3.5	88	3.5	88
12		8.8	220	8.8	220
13	Medium Density Residential – Project Alternative Only			11.9	298
	Subtotal Residential Acreage	*44.3*		*56.2*	
13	Public Facility Overlay – Proposed Project Only[2]	11.9	--		
14	Recreation Center	1.9	--	1.9	--
15	Park	0.5	--	0.5	--
16		0.5	--	0.5	--
17		3.2	--	3.2	--
18	Public Facility/Open Space (IRWD)	20.3	--	20.3	--
19	Public Facility (IRWD)	8.1	--	8.1	--
-	Roadway Rights-of-way	8.2	--	8.2	--
	TOTAL ACREAGE	**98.9**		**98.9**	
	MAXIMUM ALLOWABLE RESIDENTIAL[5]		**608**		**833**

Notes:
1. The maximum permitted residential density per planning area shall not exceed 25 dwelling units per acre (DU/AC).
2. The Public Facility Overlay allows the development of a Civic Center in PA 13.
3. Per the Development Agreement, if a Civic Center is developed in PA 13, it will be on a minimum of 9.0 usable net acres.
4. Per the Development Agreement, a neighborhood park will be provided in PA 17 on a minimum of 2.95 usable net acres.
5. Per the Development Agreement, the total number of units is not permitted to exceed 608 (with a Civic Center site) or 833 (without a Civic Center site).

TENTATIVE TRACT MAP NO. 17731

As depicted on Exhibit 2-6 and outlined in Table 2-2, *Proposed Tentative Tract Map No. 17731*, the proposed Tentative Tract Map No. 17731 would subdivide the 98.9-acre site into 37 Lots (19 lots for residential, public facilities, and parks and recreation) and associated streets and slopes for three purposes: 1) development of residential uses at a maximum density of 25 dwelling units per acre (du/ac) (a maximum of 608 dwelling units for the proposed project and a maximum of 833 dwelling units for the project alternative); 2) dedication of a site for the development of a civic center (for the proposed project); and 3) retention of the existing IRWD operations.

Table 2-2
Proposed Development for Tentative Tract Map No. 17731

Lot	Land Use	Proposed Project[1]			Project Alternative[1]		
		Pad Acreage	Landscape Lot Acreage	Total Acreage	Pad Acreage	Landscape Lot Acreage	Total Acreage
1	Residential	6.0	0.9 Lot G	6.9	6.0	0.9 Lot G	6.9
2	Residential	1.0	--	1.0	1.0	--	1.0
3	Residential	2.0	--	2.0	2.0	--	2.0
4	Residential	1.4	--	1.4	1.4	--	1.4
5	Residential	7.1	--	7.1	7.1	--	7.1
6	Residential	5.3	1.3 Lot I	6.6	5.3	1.3 Lot I	6.6
7	Residential	1.7	0.1 Lot R	1.8	1.7	0.1 Lot R	1.8
8	Residential	1.5	0.1 Lot Q	1.6	1.5	0.1 Lot Q	1.6
9	Residential	1.5	--	1.5	1.5	--	1.5
10	Residential	2.1	0.1 Lot S	2.2	2.1	0.1 Lot S	2.2
11	Residential	3.5	--	3.5	3.5	--	3.5
12	Residential	8.5	0.3 Lot F	8.8	8.5	0.3 Lot F	8.8
13	Residential – Project Alternative Only				9.3	2.6 Lot H	11.9
	Subtotal Residential	41.6	2.7	44.3	*50.9*	*5.3*	*56.2*
13[2,3]	Civic Center – Proposed Project Only[4]	9.3	2.6 Lot H	11.9			
14	Private Recreation Center	1.6	0.3 Lot N	1.9	1.6	0.3 Lot N	1.9
15	Public Park	0.5	--	0.5	0.5	--	0.5
16	Public Park	0.5	--	0.5	0.5	--	0.5
17[5]	Public Park	3.2	--	3.2	3.2	--	3.2
	Subtotal Parks/Recreation	*5.8*	*0.3*	*6.1*	*5.8*	*0.3*	*6.1*
18	Existing Water Tanks	11.0	9.3 Lots K,L,M,O	20.3	11.0	9.3 Lots K,L,M,O	20.3
19	Existing IRWD Facility	8.1	--	8.1	8.1	--	8.1
	Subtotal Existing Facilities	*19.1*	*9.3*	*28.4*	*19.1*	*9.3*	*28.4*
A	Private Drive A	0.5	--	0.5	0.5	--	0.5
B	Private Drive B	0.5	--	0.5	0.5	--	0.5
C	Private Drive C	0.6	0.2 Lot J	0.8	0.6	0.2 Lot J	0.8
D	Private Drive D	0.8	--	0.8	0.8	--	0.8
E	Private Drive E	0.3	--	0.3	0.3	--	0.3
	Subtotal Public Streets	*2.7*	*0.2*	*2.9*	*2.7*	*0.2*	*2.9*
--	"A" Street	2.2	0.3 Lot P	2.5	2.2	0.3 Lot P	2.5
--	"B" Street	1.1	--	1.1	1.1	--	1.1
--	Indian Ocean Drive	1.7	--	1.7	1.7	--	1.7
	Subtotal Public Streets	5.0	0.3	5.3	5.0	0.3	5.3
F	Landscape Lot	--	0.3	--	--	0.3	--
G	Landscape Lot	--	0.9	--	--	0.9	--
H[2]	Landscape Lot	--	2.6	--	--	2.6	--
I	Landscape Lot	--	1.3	--	--	1.3	--
J	Landscape Lot	--	0.2	--	--	0.2	--
K	Landscape Lot	--	1.7	--	--	1.7	--
L	Landscape Lot	--	3.0	--	--	3.0	--
M	Landscape Lot	--	0.7	--	--	0.7	--

Table 2-2 [continued]
Proposed Development for Tentative Tract Map No. 17731

Lot	Land Use	Proposed Project[1]			Project Alternative[1]		
		Pad Acreage	Landscape Lot Acreage	Total Acreage	Pad Acreage	Landscape Lot Acreage	Total Acreage
N	Landscape Lot	--	0.3	--	--	0.3	--
O	Open Space	--	3.9	--	--	3.9	--
P	Landscape Lot	--	0.3	--	--	0.3	--
Q	Landscape Lot	--	0.1	--	--	0.1	--
R	Landscape Lot	--	0.1	--	--	0.1	--
	Subtotal Landscape Lots	--	*15.4*	--	--	*15.4*	--
	TOTAL ACREAGE			*98.9*			*98.9*

Notes:
1. Lots 13 and H would be offered as an "irrevocable offer of dedication" to the City for the development of a Civic Center (proposed project).
2. Minimum of 9.0 usable net acres are required for the Civic Center, pursuant to the Development Agreement.
3. The Public Facility Overlay allows the development of a Civic Center in PA 13.
4. Minimum of 2.95 usable net acres are required for the Passive Park, pursuant to the Development Agreement.

Tentative Tract Map Lots 1 through 13 are proposed for future residential development. Lot 13 (and the associated landscape Lot H) would be offered to the City for the development of a Civic Center (proposed project). Lots 14 through 17 are proposed as park and recreation uses for the project's residential uses and surrounding areas. Lots 18 and 19 would continue to be used for IRWD operations. Lots A through E would be used for private streets, and "A" Street, "B" Street, and Indian Ocean Drive are proposed as public streets. Lots F through R are proposed for landscape lots.

Residential Uses

Area Plan – Proposed Project

Under the proposed project, the Area Plan designates 12 residential planning areas comprising approximately 44.3 acres. The maximum permitted residential density per Planning Area is 25 dwelling units per acre; however, the total housing unit cap for the development is established by the Development Agreement. A maximum of 608 residential dwelling units in a variety of density ranges and housing types are allowed in Planning Areas 1 through 12. The applicant has indicated that the appropriate product mix will be decided upon in the future, as dictated by the marketplace and within the provisions of the proposed Area Plan. One or more of the following proposed housing types are anticipated:

- Single-Family Detached Residential;
- Single-Family Detached Enclave Residential;
- Single-Family Attached Residential; and
- Multi-Family Attached Residential.

Planning Area 13 is designated Medium Density Residential with a Public Facility Overlay. As allowed by the Public Facility Overlay, Planning Area 13 proposes development of a Civic Center; refer to the *Civic Center* Section below.

Area Plan – Project Alternative

Under the project alternative, the Area Plan designates 13 residential planning areas comprising approximately 56.8 acres. A maximum of 833 residential dwelling units in a variety of density ranges and housing types are allowed in Planning Areas 1 through 13.

Tentative Tract Map – Proposed Project

Under the proposed project, the Tentative Tract Map involves 12 residential lots (Lots 1 through 12) that correspond with the boundaries of the Area Plan's 12 Planning Areas. The proposed lots range from 1.0 to 8.5 acres, and 5 of the 12 lots involve associated landscape lots (Lots F, G, I, R, and Q). The proposed lots would support a variety of future residential housing types (consistent with those permitted by the Area Plan); the specific housing types are unknown at this time. However, residential development would not exceed 25 du/ac per lot or 608 dwelling units, in accordance with the Area Plan.

Tentative Tract Map – Project Alternative

Under the project alternative, the Tentative Tract Map involves 13 residential lots (Lots 1 through 13) that correspond with the boundaries of the Area Plan's 13 Planning Areas. The proposed lots range from 1.0 to 9.13 acres, and 7 of the 12 lots involve associated landscape lots (Lots F, G, H, I, R, and Q). Residential development would not exceed 25 du/ac per lot or 833 dwelling units.

Civic Center (Public Facility)

Area Plan – Proposed Project (Planning Area 13)

Under the proposed project, the Area Plan designates Planning Area 13 (approximately 11.9 gross acres) as Medium Density Residential with a Public Facility Overlay. In accordance with the Overlay, Planning Area 13 is planned for a Civic Center that would be designed to serve as governmental offices for the City of Lake Forest. The Civic Center is anticipated to contain a City Hall, a Community Center, sheriff/police facilities, and parking.

Area Plan – Project Alternative

The project alternative does not involve a Public Facility (i.e., Civic Center) in Planning Area 13. Medium Density Residential uses are proposed; refer to the *Residential Uses [Area Plan – Project Alternative]* Section above.

Tentative Tract Map – Proposed Project

As permitted by the Area Plan's Public Facility Overlay, the Tentative Tract Map proposes a Civic Center on Lot 13, which would be offered as an "irrevocable offer of dedication" to the City for the development of a Civic Center. Pursuant to the Development Agreement, a 9.3-acre

development pad plus approximately 2.6 acres of landscaping (Lot H) would be provided. The future Civic Center would include an approximately 44,000-square foot City Hall and approximately 20,000 square feet of community center space located in one or two buildings, with a possible future 50,000-square-foot government facility.

Tentative Tract Map –Project Alternative

The project alternative does not involve a Civic Center on Lot 13. Residential uses as permitted by the Medium Density Residential designation are proposed; refer to the *Residential Uses [Tentative Tract Map – Project Alternative]* Section above.

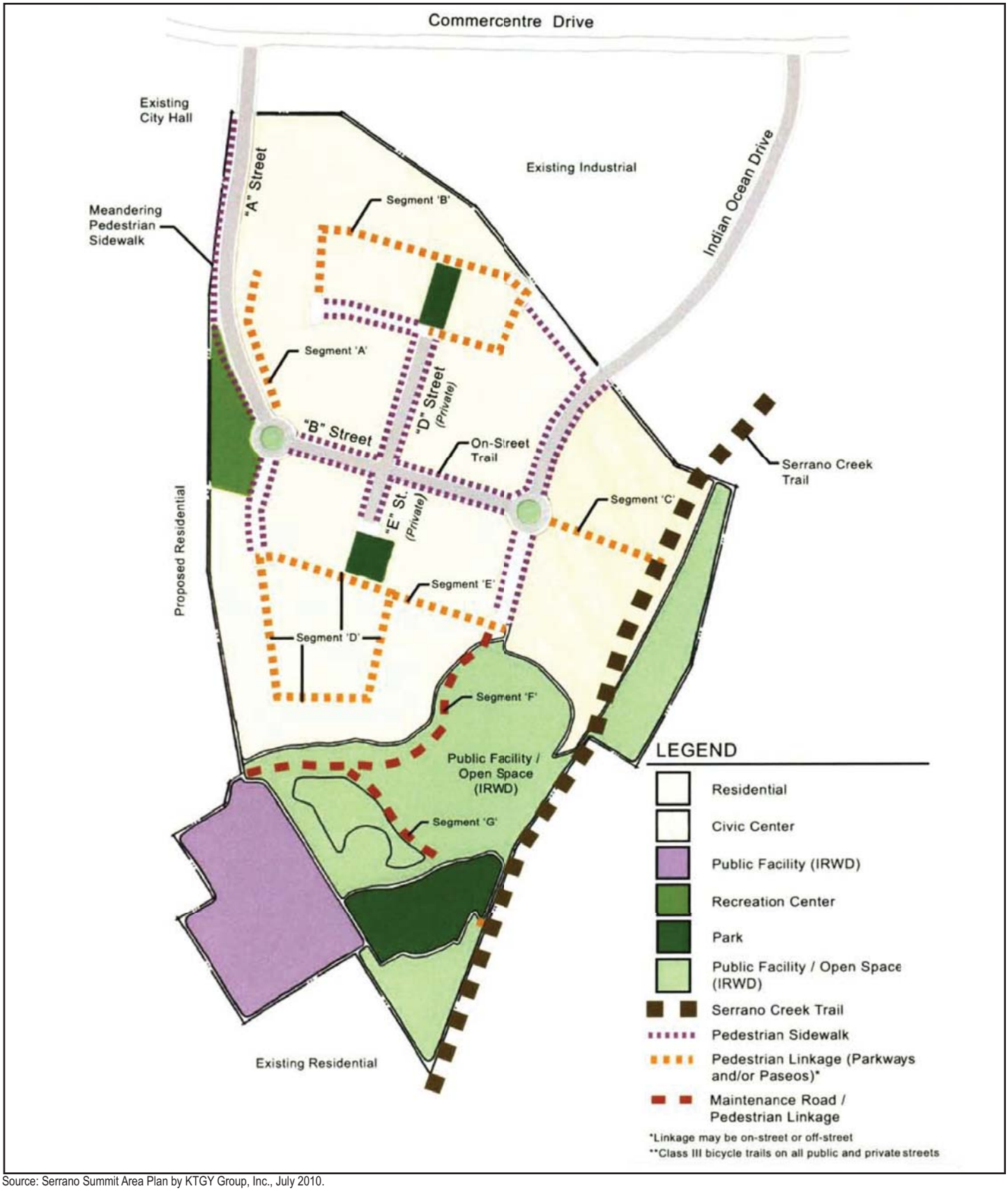
Parks and Trails

Area Plan

The Area Plan designates approximately 6.1 acres to be utilized for a 1,500-square foot private recreation center (Planning Area 14), and two neighborhood parks, and a passive/nature park, (Planning Areas 15 through 17); refer to Exhibit 2-7, *Proposed Master Plan of Parks, Trails, and Open Space*. The Area Plan identifies Planning Area 14 for the development of a private recreation center. This recreation center would be available for use by residents within the Serrano Summit community and their guests. The facility would include a clubhouse building, restrooms and showers, a swimming pool, tot lot, open play area, and a surface parking lot. The recreation center has been specifically sited to offer views and vistas of the surrounding areas. There would be two 0.5-acre on-site neighborhood parks (Planning Areas 15 and 16). According to the Development Agreement, neighborhood parks must be a minimum of 0.5 acres in size (for a total of one acre) in order to be considered for public park credit. Amenities supporting the neighborhood parks would include one or more of the following: seating areas; volleyball court or basketball court (1/2 court); tables; benches; trash cans; drinking fountains; and barbecues, shade structure for group recreation purposes, play area/tot lot, and/or informal gathering areas. In addition to the neighborhood parks, the Area Plan identifies a passive/nature park located adjacent to Serrano Creek (Planning Area 17), totaling 3.2 acres.

Tentative Tract Map

As depicted in Table 2-2, the Tentative Tract Map creates four lots (Lots 14 through 17) for parks and recreation uses: a private recreation center; two public parks; and one public passive park. The proposed private recreation center would be located on a 1.6-acre pad with 0.3 acres of landscaping (Lot N) for a total of 1.9 acres (Lot 14). This center would be situated along the site's western boundary. The two proposed public parks would each total 0.5 acres, and would be situated at the northern terminus of Private Street "D" (Lot 15) and the southern terminus of Private Street "E" (Lot 16). The passive public park is also proposed on Lot 17 and totals 3.2 acres at the southernmost portion of the project site.



Source: Serrano Summit Area Plan by KTGY Group, Inc., July 2010.

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SERRANO SUMMIT AREA PLAN 2009-01 AND
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INITIAL STUDY / ENVIRONMENTAL CHECKLIST

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Proposed Master Plan of Parks, Trails, and Open Space

Exhibit 2-7

Open Space and Existing Public Facilities

Area Plan

The Area Plan identifies Planning Areas 18 and 19 as Public Facility/Open Space uses. These areas contain existing IRWD facilities, as described in the *Existing On-Site Conditions* Section above, which are proposed to be retained on-site. The Serrano Creek regional trail provides recreational pedestrian and bicycle amenities from the northeastern portion of the City along Serrano Creek and adjacent to the project area. A shared pedestrian access and service road is proposed to provide connections between the project site, regional trail system (i.e., the Serrano Creek Trail), and passive/nature park.

Tentative Tract Map

As identified on Tentative Tract Map Lots 18 and 19, the project would maintain the existing water tanks (on 20.3 acres) as well as the existing IRWD facility (8.1 acres). Also, the project would include a proposed trail easement at the northwestern portion of the site, which would connect the existing Serrano Creek Trail with Lot 13. Lot 13 would be connected to the proposed passive public park (located at the southern portion of the site at Lot 17) through a shared roadway that would serve both pedestrian and utility access along Lot K and the southern portion of Lot 18.

Circulation System

Area Plan

The project area is accessible regionally from Commercentre Drive, Bake Parkway, and Lake Forest Drive/Dimension Drive. Locally, access to the project area is proposed via Commercentre Drive, which would connect to the project site via Indian Ocean Drive on the east and Biscayne Bay Drive on the west. The project site would be served internally by a network of public collector roadways and private local streets. The proposed collector streets are: Indian Ocean Drive; "A" Street (currently Biscayne Bay Drive); and "B" Street (which connects Indian Ocean Drive and "A" Street at two roundabouts), with private access streets to various Planning Areas.

The Area Plan indicates vehicle access and connectivity for all proposed Planning Areas. Each Planning Area will then have internal roadways, to be reviewed in greater detail at project review stage. The Area Plan also indicates connectivity between the development and the existing water treatment plant area and. It is anticipated that service or delivery vehicles may utilize these connections to travel from Indian Ocean Drive to the water treatment facility.

Tentative Tract Map

The Tentative Tract Map proposes three public streets (an extension of Indian Ocean Drive, "A" Street, and "B" Street) and five private streets (Private Drive A through Private Drive E) (Lots A through E). Indian Ocean Drive proposes a right-of-way width ranging from 47.5 to 51.5 feet. "A" Street proposes a right-of-way width of 71 feet. "B" Street proposes a right-of-way width of 56 feet. Right-of-way associated with private streets would range from 46 to 68 feet in width.

General Design Guidelines

The Area Plan establishes design guidelines for all new development within the project site. Individual development projects would be required to substantially comply with all applicable design guidelines, as they define the minimum or baseline standards. The design guidelines further define the desired character and image of development for the project site. Design guidelines for residential uses address a variety of areas including, but not limited to, site plan design, building form and massing, roof design, building materials, roof materials, building color, garage design, outdoor living space, architectural detailing, and functional elements. The proposed Area Plan also includes a Green Builder Program that includes energy conservation measures, reduction of non-renewable resources, and California-appropriate landscaping practices.

Civic Center design guidelines include elements such as, but are not limited to, site design, general guidelines for buildings, civic center buildings, and a parking structure, as well as civic center plaza design, landscaping, signage, bus shelters, walls and fences, and lighting standards. Because the designs for the Civic Center have not been initiated yet, these design guidelines are intended to be generic in nature and no not mandate the construction of any of the elements.

Landscape Design Guidelines

Specific landscape design principles are enforced through the Area Plan's design guidelines. These design guidelines include, but are not limited to, specific landscape theme requirements, irrigation practices and design requirements, designated tree districts, a tiered landscape program, and specific streetscape design guidelines. The designated tree districts include Riparian Zone, Coniferous Forest Zone, California Hillside Friendly Zone, and Fuel Modification Overlay. Exhibit 2-8, *Proposed Conceptual Landscape Master Plan*, depicts on-site tree and shrub requirements as well as required plant species for the Riparian Fuel Modification Zone. The proposed Landscape Design Guidelines also include specific guidelines for community and neighborhood entries and monumentation. Key entries are proposed in order to enhance community identity and establish a unique character and theme for the project site through the use of specific plant groupings.

The proposed Landscape Design Guidelines include specific standards for proposed community trails, neighborhood parks, and the recreation center. Also, a themed community wall program and overall wall guidelines would be implemented. Wall design, materials, color, and finishes would be required to complement adjacent architecture. Lighting design and practices are included to be consistent in style, color, and materials for the project. Lighting fixtures would be required to provide sufficient illumination for the safety and well being of the community as well as prevent glare from impacting adjacent residents.

Development Regulations

The Area Plan's Development Regulations, along with the Zoning Ordinance and the Development Agreement, regulate design and development within the project area. The Regulations include general provisions, which apply to all proposed land development within the project area and sustainability development regulations, which address structures and site development, and landscape sustainability. The Development Regulations provided in the Area

Plan also address the following issues: signage; lighting; site furnishings; bus turnouts and shelters; mail boxes, and model homes.

Grading

Area Plan

The proposed Area Plan includes a conceptual grading approach that is consistent with the requirements of the City and proposes mass graded pads at a minimum of one percent slope; refer to Exhibit 2-9, *Proposed Grading Concept Plan*. Generally, the proposed Conceptual Grading Plan includes the retention of the general slope of the site relative to its surroundings as well as existing edge conditions. The Area Plan proposes grading work to be balanced on-site, to minimize export or import of earth. The grading concept proposes terracing of the site into several mass-graded pads, to accommodate for Planning Areas 1 through 16, while the remainder of the site will slope downward toward the south, essentially retaining its current slope.

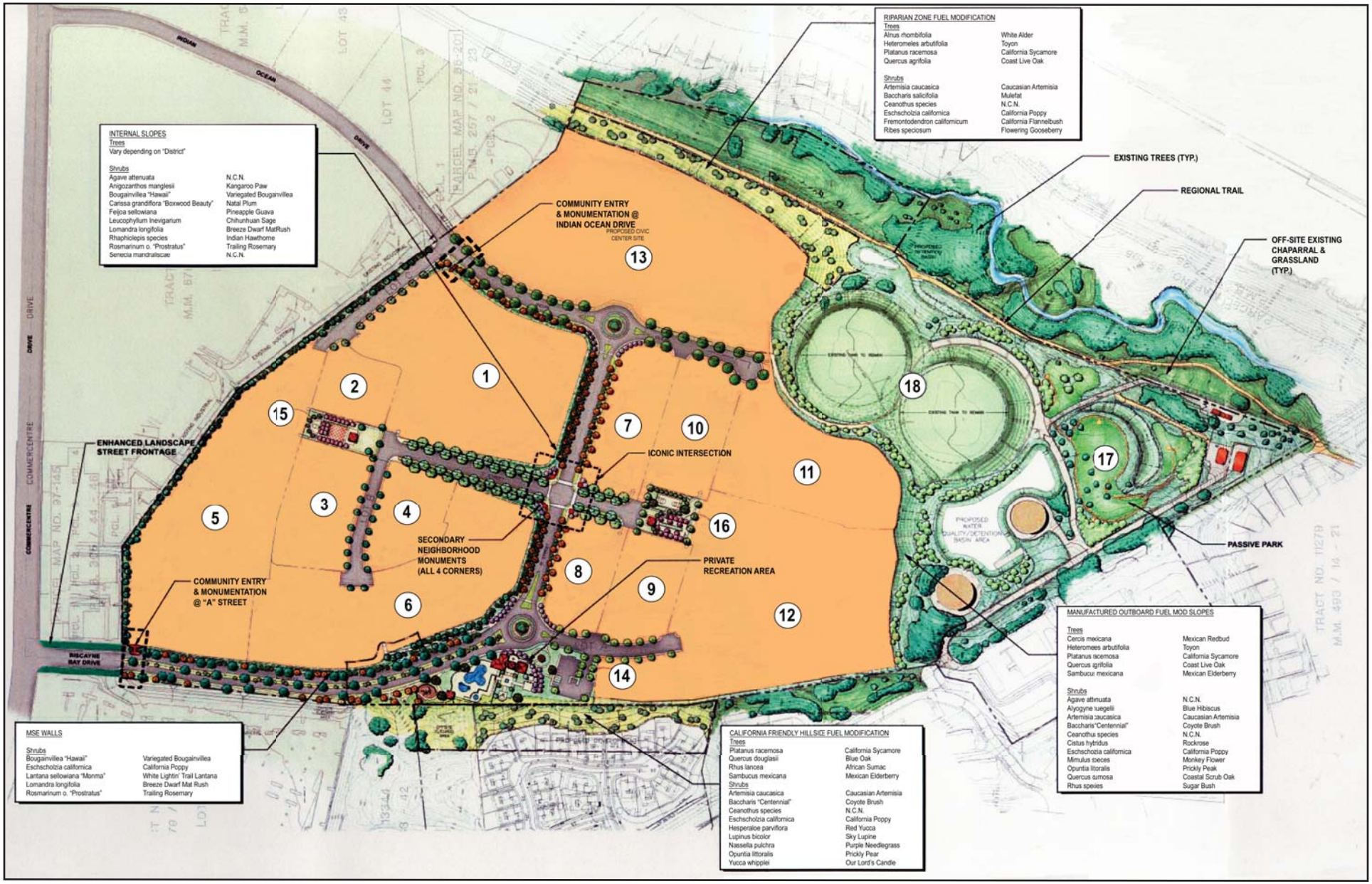
Based on the Grading Concept Plan, there is no off-site grading proposed. The portion of the project site east of the Serrano Creek is not proposed to be graded.

Tentative Tract Map

The proposed grading shown on the Tentative Tract Map reflects the conceptual grading approach in the Area Plan. The estimated earthwork, which would be balanced on-site, would involve approximately 860,000 cubic yards (CY) of cut and approximately 860,000 CY of fill. All slopes would be constructed at a maximum slope ratio of 2:1 and would be terraced. All lot and pad gradients would be 2.0 percent minimum.

Several mass-graded pads are proposed. The mass graded pads would have 1.0 percent minimum grades. The first mass-graded pad is proposed at the north part of the site and would accommodate for Planning Areas 1 through 6 and 16. The pad elevation is proposed to be approximately 685 above mean sea level (MSL), which would be achieved by lowering portions of the site and raising other portions. The current elevation of this area would range from 660 to 700 feet above MSL. To achieve a flat area for development, slopes and retaining walls are proposed around the Planning Area perimeters. Because these walls would be located at the back of the street and visible from lower grades, landscaped buffers with trees, shrubs, and ground cover are planned. Substantial retaining walls are proposed to be mechanically stabilized earth (MSE) walls, while other walls would be vertical concrete masonry. Wall heights identified on the Map are up to 16.5 feet tall.

The second mass-graded pad is proposed south of “B” Street and would accommodate for Planning Areas 7 through 12, and 14 and 15. The pad elevation is proposed to be approximately 655 feet above MSL, which is about 10.0 feet lower than the existing elevation. The southern boundary of this pad would be lower in elevation and therefore would require retaining walls and slopes to accommodate the grade difference. The retaining walls would likely be visible from the IRWD water treatment facility.



Source: Serrano Summit Area Plan by KTGY Group, Inc., October 2009.

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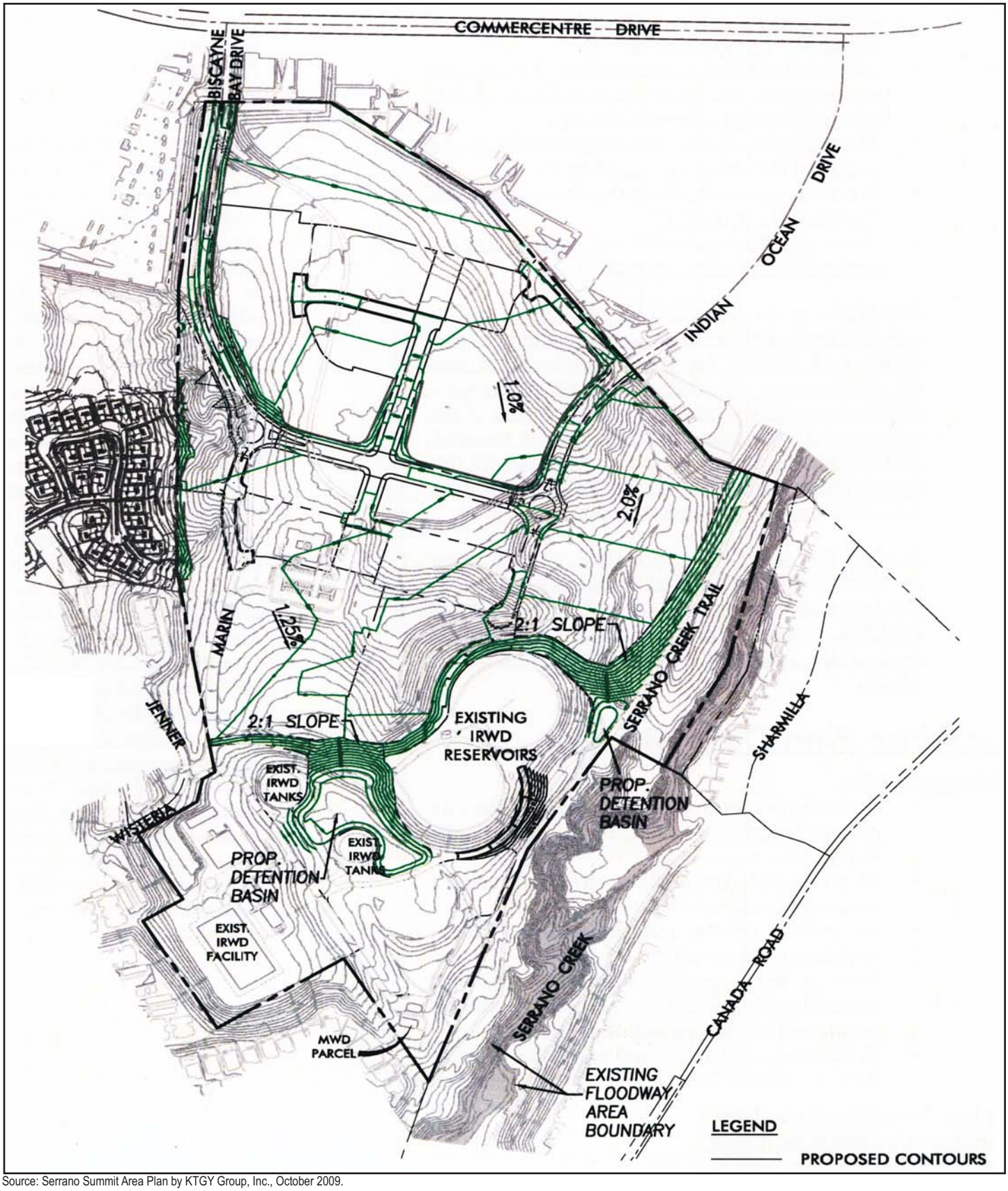
Proposed Conceptual Landscape Master Plan

Exhibit 2-8



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Proposed Grading Concept Plan

Exhibit 2-9

The third and last graded pad is proposed in Planning Area 13, which must be graded and compacted to a 2 percent slope and dedicated to the City (under the proposed project), per the Development Agreement. The existing elevation of this area ranges from 580 to 670 feet above MSL. The proposed elevation is approximately 665 feet above MSL and would require a significant amount of fill from other parts of the site.

Retaining walls located adjacent to streets would be decorative. The City recently adopted Retaining Wall Design Guidelines and the proposed retaining walls must be consistent with the Guidelines.

2.5 PROJECT PHASING

The proposed phasing for the project provides a conceptual framework to facilitate development of the Area Plan, while assuring the provision of infrastructure necessary to support the planned development; refer to Exhibit 2-10, *Development Phasing Plan*. Development is assumed to occur in four phases:

- Phase I: Includes "A" Street, "B" Street, and the extension of Indian Ocean Drive, as well as Lots 7 through 12 (residential), and 16 and 17 (public parks);
- Phase II: Includes Lot 14, the private recreation center;
- Phase III: Includes Lots 1 through 6 (residential) and Lot 15 (public park);

Proposed Project
- Phase IV: Includes Lot 13, the proposed Civic Center.

Project Alternative
- Phase IV: Includes Lot 13 (residential).

Following the City's certification of the environmental document and approval of the Area Plan, the phased development of the Area Plan would commence in a manner designed to address the following objectives:

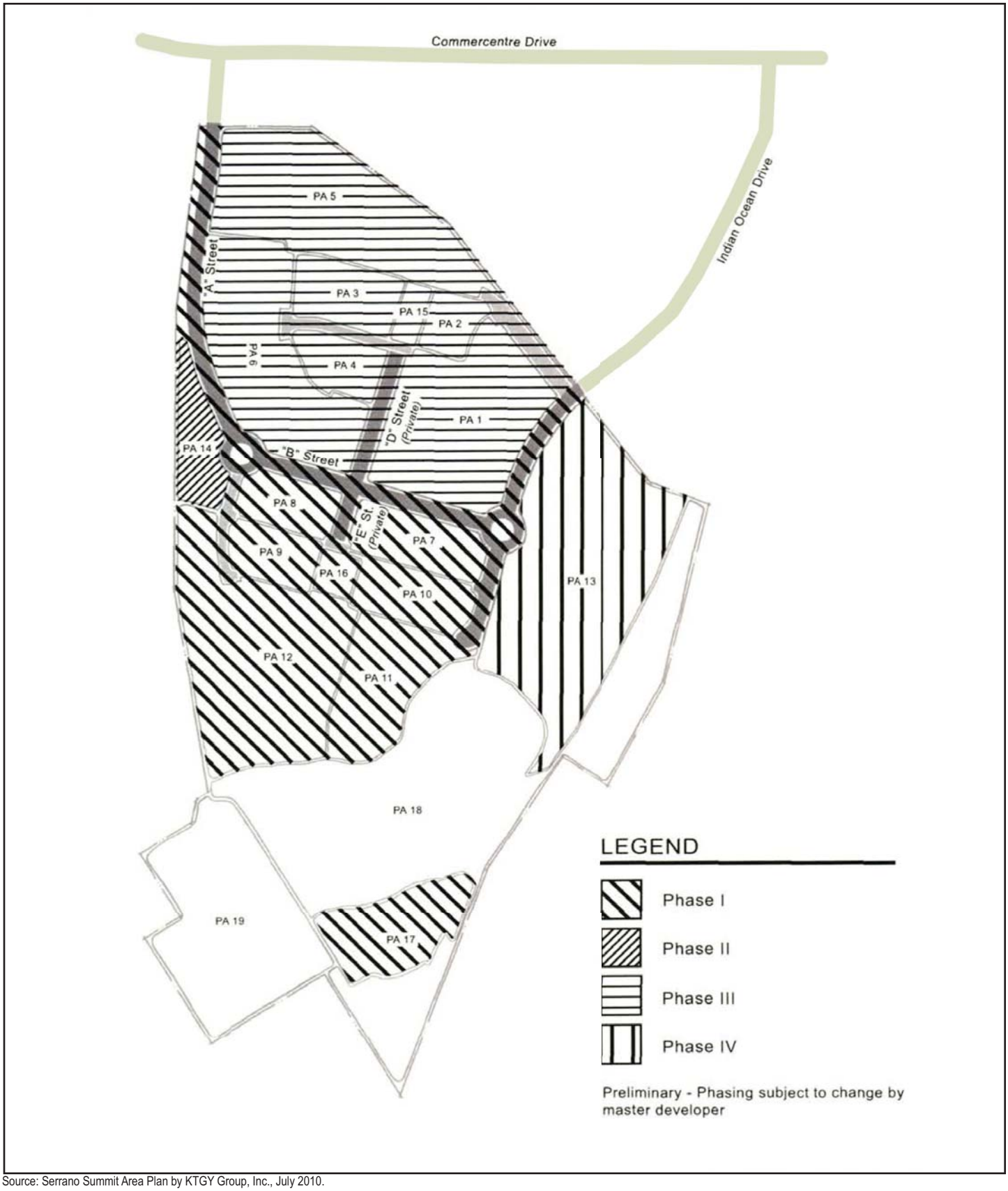
- Orderly build-out of the community based upon market and economic conditions.

- Implementation of financing mechanisms without creating a financial or administrative burden on the City.

- Provision of adequate infrastructure and public facilities concurrent with development of each phase.

- Protection of public health, safety, and welfare.

The exact timing, location, and extent of individual phases is largely dependent on the independent decisions of the private developers and landowners who are, in turn, influenced by market conditions. Phasing would also likely be influenced by relative capital costs associated with extending infrastructure and services to different phases.



Source: Serrano Summit Area Plan by KTGY Group, Inc., July 2010.

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SERRANO SUMMIT AREA PLAN 2009-01 AND
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INITIAL STUDY / ENVIRONMENTAL CHECKLIST

Development Phasing Plan

Exhibit 2-10

2.6 PROJECT APPROVALS

The City, as Lead Agency for the project, has discretionary authority over the proposed Area Plan. In order to implement this project, future developers would need to obtain, at a minimum, the following discretionary permits/approvals:

- Subsequent tentative maps, site plans, and/or condominium maps;
- Final Development Plan(s);
- Use Permit(s), if applicable;
- Grading Permit(s);
- Building Permit(s);
- Permit(s) from the South Coast Air Quality Management District;
- Permits from the Irvine Ranch Water District; and
- Notice of Intent and Water Quality Management Plan for the Santa Ana Regional Water Quality Control Board.

3.0 ENVIRONMENTAL SUMMARY

3.1 BACKGROUND

1.	**Project Title:** Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331
2.	**Lead Agency Name and Address:** City of Lake Forest 25550 Commercentre Drive, Suite 100 Lake Forest, CA 92630
3.	**Contact Persons and Phone Number:** Ms. Carrie Tai, AICP, Senior Planner 949.461.3466
4.	**Project Location:** The project site is located to the north of the Serrano Highlands residential neighborhood, south of Commercentre Drive, east of Bake Parkway, and west of Serrano Creek.
5.	**Project Sponsor's Name and Address:** Irvine Ranch Water District 15600 Sand Canyon Avenue Irvine, CA 92618
6.	**General Plan Designation:** Medium Density Residential (MDR) with Public Facilities Overlay and Public Facility.
7.	**Zoning:** Multi-Family Dwelling with a Planned Development Combining District (R2-PD).
8.	**Description of the Project:** Refer to Section 2.4, *Project Characteristics*.
9.	**Surrounding Land Uses and Setting:** Surrounding land uses consist of light industrial, office/commercial, institutional (City Hall), single family residential, condominium, and vacant land uses.
10.	**Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):** To be determined as part of further review in the EIR.

3.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

3.3 LEAD AGENCY DETERMINATION

On the basis of this initial evaluation:

I find that the proposed use COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

I find that although the proposal could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described in Section 4.0, *Inventory of Mitigation Measures*, have been added. A MITIGATED NEGATIVE DECLARATION will be prepared.

I find that the proposal MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ✖

I find that the proposal MAY have a significant effect(s) on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

Signature	City of Lake Forest
	Agency
Carrie Tai, AICP, Senior Planner	April 29, 2011
Printed Name	Date

3.4 EVALUATION OF ENVIRONMENTAL IMPACTS

This section analyzes the potential environmental impacts associated with the proposed project and project alternative. The issue areas evaluated in this Initial Study include:

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

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by the *CEQA Guidelines*, as amended, and used by the City of Lake Forest in its environmental review process. For the preliminary environmental assessment undertaken as part of this Initial Study's preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the development's impacts and to identify mitigation. The City prepared the *CEQA Significance Thresholds Guide*, published November 20, 2001, revised March 2009, as a tool that compiles information that is useful in the preparation of environmental documents. The Guide provides assistance in evaluating the significance of project impacts for six key topical issues in the City: traffic, noise, air quality, land use, aesthetics, and water resources.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the development. To each question, there are four possible responses:

- **No Impact.** The development will not have any measurable environmental impact on the environment.

- **Less Than Significant Impact.** The development will have the potential for impacting the environment, although this impact will be below established thresholds that are considered to be significant.

- **Less Than Significant Impact With Mitigation Incorporated.** The development will have the potential to generate impacts, which may be considered as a significant effect on the environment, although mitigation measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.

- **Potentially Significant Impact.** The development could have impacts, which may be considered significant, and therefore additional analysis is required to identify mitigation measures that could reduce potentially significant impacts to less than significant levels.

Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

4.0 ENVIRONMENTAL ANALYSIS

The following is a discussion of potential project impacts as identified in the Initial Study. Explanations are provided for each item.

4.1 AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?				✓
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c. Substantially degrade the existing visual character or quality of the site and its surroundings?			✓	
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?		✓		

Based on the City's *CEQA Significance Thresholds Guide*, a project would normally have a significant visual impact if one of the following occur:

- A project will substantially damage scenic resources, including scenic vistas from public parks and views from designated scenic highways or arterial roadways.
- A project will 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.
- A project will create a new source of substantial glare which would adversely affect daytime visibility and/or views in the area.
- A project will 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.

Impact Analysis

4.1(a) Have a substantial adverse effect on a scenic vista?

No Impact. The City's General Plan does not identify the project or surrounding area as within or part of a scenic vista. The surrounding area is primarily urbanized, with some interspersed areas of vacant land. Implementation of the proposed project would involve development of residential uses combined with park and recreational areas, a new Civic Center, and existing public facilities. Implementation of the project alternative would involve development of residential uses combined with park and recreational areas, and existing public facilities. No impact would occur as project implementation would not have a substantial adverse effect on an existing or designated scenic vista. This topic will not be further analyzed in the EIR.

Conversely, public vistas would be afforded from the project site as development will allow population onto the site. Although, not General Plan-designated, these views would be to the south and west, toward the Pacific Ocean and San Joaquin Hills.

4.1(b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The project site is not located in the vicinity of a State scenic highway or an arterial roadway within the City.[1] Therefore, no impacts would result, as the project would not result in substantial damage of scenic resources within the viewshed of a State scenic highway or City arterial roadway. This topic will not be further analyzed in the EIR.

4.1(c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. The City's General Plan identifies visual resources to include trees, lakes, creeks, canyons, hillsides, mineral resource areas, and other open lands that enhance the City's visual character and quality. The City's General Plan also states that parks and open space enhance the community character.

A viewpoint (VP) is an area that can be seen from a particular position (i.e., viewed from various locations on the project site and along roadways to and within the area). Nine VPs were selected for this analysis to represent public views from both public right-of-way and publicly accessible areas located within the project vicinity. The VPs were selected in consultation with City staff and the photographs were taken in September 2010. Exhibit 4.1-1, *Viewpoint Location Map*, illustrates the locations of the VPs. All VPs were utilized to depict existing conditions and future project conditions involving the visual character/quality of the project site and its surroundings. The pre- and post-project condition for each of the VP's is depicted on Exhibits 4.1-2 through 4.1-10, *Viewpoints 1 through 9*.

[1] The Lake Forest Municipal Code defines an Area Plan as a plan "containing relatively more detailed information and addresses a relatively smaller area of real property than a feature plan…an area plan for planned community or specific plan may have less restrictive site development standards if allowed by the enabling ordinance."

Source: Google Maps, 2010.

- Project Site Boundary

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Viewpoint Location Map

Exhibit 4.1-1

EXISTING

PROPOSED

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Viewpoint 1

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Exhibit 4.1-2

EXISTING

PROPOSED

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Viewpoint 2

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Exhibit 4.1-3

EXISTING

PROPOSED

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Viewpoint 3

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Exhibit 4.1-4

EXISTING

PROPOSED

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Viewpoint 4

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Exhibit 4.1-5

EXISTING

PROPOSED

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Viewpoint 5

Exhibit 4.1-6

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Viewpoint 6

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Exhibit 4.1-7

EXISTING

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Viewpoint 7

Exhibit 4.1-8

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Viewpoint 8

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Exhibit 4.1-9

EXISTING

PROPOSED

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Viewpoint 9

Exhibit 4.1-10

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Existing Visual Character

Exhibit 4.1-1 depicts the project site in the context of its environmental setting. Much the project site is not located near existing residential neighborhoods. The closest neighborhoods to the project site are located east of Serrano Creek (approximately 315 feet to the east), along Marin Drive (approximately 100 feet to the west), and approximately 200 feet to the south. VPs 1 and 2 depict the character of the project site as experienced from residential neighborhoods to the east. As illustrated in VP 1, the project area has historically been used for agricultural purposes and has not been re-planted. The project site is primarily characterized by these fallow (disturbed) areas, which contain ruderal vegetation and encompass nearly all of the site's southern portion. The ruderal and mixed scrub vegetation that is present in the southeastern portion of the site, as well as the Serrano Creek corridor located immediately to the east also influence the site's character; refer to VPs 1 and 2. VP 3 also illustrates the site's visual character, which is dominated by coastal sage scrub, from the southern terminus of Indian Ocean Drive. VPs 4 through 7 depict the character of the project site as experienced from the Serrano Creek Trail. As depicted from these VPs, the project site is predominantly characterized as vacant land containing disturbed areas, and ruderal, mixed scrub, and ornamental vegetation. From VPs 6 and 7, the site is also characterized by restored coastal sage scrub. Although, the project site (southern portion) has more recently been used by the IRWD for water storage and treatment, these existing uses are not visible and do not influence the site's character, as experienced from VPs 1 through 7. VP 8 illustrates the site's visual character, which is dominated by coastal sage scrub, from the southern terminus of Biscayne Bay Drive. VP 9 illustrates the site's visual character from Marin Drive, which is dominated by ornamental vegetation and trees.

Significance Criteria

A project is generally considered to have a significant visual/aesthetic impact if it substantially changes the character of the project site such that it becomes visually incompatible when viewed in the context of its surroundings. Based on the City's *CEQA Significance Thresholds Guide*, a project would normally have a significant visual impact if a project will 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.

Short-Term Impacts To Visual Character

Project development is assumed to occur in four phases. Construction phasing for the proposed project and project alternative is described in Section 2.5, *Project Phasing*. During project construction, sensitive viewers (e.g., residents to the east of the project site that are located at a higher elevation) would be exposed to site disturbance activities and project construction. During the construction phase of individual development projects, views within and across the project site would be disrupted. While the construction site as a whole would be fenced in accordance with regulations, graded surfaces, construction debris, construction equipment, and truck traffic would be visible. Additionally, soil would be stockpiled and equipment for grading activities would be staged at various locations throughout the site.

During construction, dump trucks and other trucks hauling demolition or grading materials from the project site would be required to access the site via local roadways. Truck access would occur along Biscayne Bay Drive or Indian Ocean Drive. Properties within this area that would have views to truck traffic include office/commercial and light industrial land uses, which are typically not considered sensitive viewers. Compliance with standard conditions of approval, such as fencing and screening of construction areas, dust control measures, and construction hour limitations, will minimize short-term visual impacts. Therefore, impacts which would result in the degradation of character/quality to the site are not anticipated to occur. Conversely, construction of the site in accordance with the Area Plan is anticipated to result in the site's appearance gradually becoming more consistent with its surroundings. This topic will be not be further analyzed in the EIR.

Long-Term Impacts To Visual Character

The visual impact analysis in this section is based on field observations, visual simulations, and the proposed Area Plan and Tentative Tract Map. The visual simulations employ a line-of-sight analysis, in order to demonstrate the degree of change that would likely result from project implementation, as viewed from the identified VPs (i.e., publicly accessible locations, local roads, and Serrano Creek Trail). The simulations are intended to depict, at a conceptual level of detail, the proposed project conditions. Therefore, these visual simulations depict building massing and scale, with limited architectural details. They are intended to generally illustrate the form, size, and function of the project's proposed structures, in the context of their environmental setting. Although conceptual, the simulations present a reasonably accurate depiction of the project's appearance at completion.

The project is described in detail in Section 2.4, *Project Characteristics*, and the Tentative Tract Map is provided in Exhibit 2-6. The existing vegetation and disturbed areas that occur on the northern portion of the site would be replaced by the proposed Area Plan development, including residential and government buildings, hardscapes, landscapes, and roadways (no residential buildings under the project alternative). The southern portion of the site currently used for water storage and treatment operations would remain as such and would be altered to a lesser degree. The future visual character of the project site and its surroundings is depicted on Exhibits 4.1-2 through 4.1-10. For the proposed project, development of the project site would consist of residential uses and associated park and recreational areas, a new Civic Center, and the existing water facilities. Generally, north of the existing water facilities (Lot 18), the proposed project would replace vacant lands with residential uses, a Civic Center, private recreation center, and two centrally located parks. For the project alternative, development of

the project site would consist of residential uses and associated park and recreational areas, and the existing water facilities. Generally, north of the existing water facilities, the project alternative would replace vacant lands with residential uses, a private recreation center, and two centrally located parks.

Overall, project implementation would significantly alter the visual character of the vacant project site. Despite this visual alteration, project implementation would not substantially degrade the visual character or quality of the project site or its surroundings. The project would develop an in-fill property that is surrounded by other residential and non-residential developments, and would be consistent with the General Plan's intended use for the property; refer to Response 4.10(b). The proposed development would be consistent with the historic development that has occurred in the surrounding area and represents a reasonable or natural progression of development. This is demonstrated through the adjoining residential developments, which replaced vacant land and vegetation with residential uses, similar to the proposed project.

For all new development within the project site, the Area Plan establishes regulations and guidelines that would influence the site's future visual character and ensure the visual character of the site and its surroundings is not degraded. Namely, the Area Plan's Development Regulations, along with the Zoning Ordinance and Development Agreement, regulate design and development, and establish districts and their corresponding development standards. The Development Regulations also address signage, lighting, and site furnishings. The General Design Guidelines define the desired character and image of development for the project site, and address a variety of aesthetic issues (i.e., site plan design, building form and massing, roof design, building materials, roof materials, building color, garage design, and architectural detailing). The *Landscape Design Guidelines* include specific landscape theme requirements, design requirements, and specific streetscape design guidelines. Key entries are proposed in order to enhance community identity and establish a unique character and theme for the project site. Individual development projects would be required to substantially comply with all applicable regulations and guidelines. Therefore, although the proposed development would substantially alter the visual character of the project site as observed from VP1 through VP9, its visual change would not substantially degrade the visual character or quality of the project site and its surroundings. A less than significant impact would occur in this regard and this topic will not be further analyzed in the EIR.

4.1(d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less Than Significant Impact With Mitigation Incorporated. 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.

Based on the City's *CEQA Significance Thresholds Guide*, a project would normally have a significant visual impact if one of the following occurs:

- A project will 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.

- A project will create a new source of substantial glare which would adversely affect daytime visibility and/or views in the area.

Short-Term Construction

Construction activities may require the use of security lighting in the evening and nighttime hours. However, with implementation of Mitigation Measure NOI-1, the project would only conduct construction activities between the hours of 7:00 AM and 8:00 PM Monday through Saturday, and no construction activities would occur on Sundays and Federal holidays. Therefore, any construction-related lighting would be required to cease by 8:00 PM. Potential construction-related impacts are short-term and would cease upon development completion. With adherence to the recommended Mitigation Measure NOI-1, potential construction-related lighting impacts would not result in "sky glow" or "spill light" onto adjacent sensitive uses. Thus, impacts would be reduced to less than significant levels and this topic will not be further analyzed in the EIR.

Long-Term Operations

The project area and its surroundings include a range of development, from industrial uses to relatively low-intensity development such as residential uses, as well as open spaces. Currently, light and glare being emitted from the project site are limited to security lighting associated with the existing IRWD facility. Existing sources of light from the surrounding uses are due to the interior of buildings, street lighting, building illumination, signage, and security lighting, as well as parking lot lighting. As no major roadways currently exist on or near the project site, light and glare from car headlights is generally not experienced on the project site.

Project implementation would result in the development of new structures on a primarily vacant site. Project implementation would also introduce new sources of light, including lighting for activity areas involving nighttime uses, parking, lighting around the structures (security lighting and walkways) and lighting for interior of buildings. Existing on-site lighting associated with the IRWD uses (i.e., security lighting) would remain. Light sensitive receptors would include the residents to the east of the project site (situated at a higher elevation). The project's potential lighting impacts could result in "sky glow", as viewed from adjacent sensitive uses (located at a higher elevation than the project site). The Opportunities Study Program EIR included Mitigation Measures to ensure that lighting has minimal impacts to surrounding properties. The project would be subject to compliance with these Mitigation Measures to ensure that lighting has minimal impacts to surrounding properties through the use of appropriate light fixtures and technology. Furthermore, the Area Plan identifies Development Regulations for site lighting to ensure sufficient illumination for safety purposes while preventing glare. Therefore, with adherence to Mitigation Measure AES-1 (referenced below) and the Area Plan Development Regulations, long-term light and glare impacts would be less than significant. This topic will not be further analyzed in the EIR.

AES-1 Prior to issuance of a precise grading permit for the project, the applicant shall submit a photometric plan to the Development Services Department for review and approval. The plan shall specify the following:

a. 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. 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.

b. All interior floodlights, lighting and advertising (including signage), and other security lighting shall be directed away from adjacent uses and towards the specific location intended for illumination. All lighting shall be shielded to minimize the production of glare and light spill off-site. Landscape illumination and exterior sign lighting shall be accomplished with low-level unobtrusive fixtures.

c. The plan shall include the types and appearance of proposed residential light standards. (Source: OSA PEIR Mitigation Measure MM 3.1-1 to 3.1-4)

4.2 AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department 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:	**Potentially Significant Impact**	**Less Than Significant Impact With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?			✓	
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
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))?				✓
d. Result in the loss of forest land or conversion of forest land to non-forest use?			✓	
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?			✓	

Impact Analysis

4.2(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?

Less Than Significant Impact. According to the OSA PEIR, the project site does not contain prime or unique farmland, and accordingly concluded a less than significant impact in this regard. However, based on the Department of Conservation's Farmland Mapping and Monitoring Program, portions of the northern portion of the project site are designated as Farmland of Statewide Importance and Unique Farmland.[2] Based on these designations, the land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. The project site has not been irrigated for agricultural

[2] Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, *Orange County Important Farmland 2008*, map published August 2009.

production since at least 1990. The *Orange County Important Farmland 2008* map was published in August 2009. Thus, as the project site has not been irrigated for agricultural production for at least 19 years, the project site does not support unique farmland or farmland of statewide importance. Impacts pertaining to the conversion of prime or unique farmland (or Farmland of Statewide Importance) to non-agricultural use are less than significant and this topic will not be further analyzed in the EIR.

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

No Impact. Although portions of the project site have historically been zoned for agricultural uses, the project site is currently zoned Multifamily Dwellings with a Planned Development Combining District (R2-PD)]. The project site is not part of a Williamson Act Land contract or located within an agricultural preserve. Therefore, there is no conflict with existing zoning or with a Williamson Act contract and no impact would result. This topic will not be further analyzed in the EIR.

4.2(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. The project area is currently zoned Multifamily Dwellings with Planned Development Combining District (R2-PD). The project site comprises vacant land (a portion of which was historically used for agricultural purposes) and the existing IRWD facility. On-site riparian vegetation is located along the project site's eastern boundary, along Serrano Creek and may be considered forest land based on Public Resources Code Section 12220(g). The project would disturb approximately 1.91 acres of riparian vegetation (potential forest land) (within Tentative Tract Map Lot 13). However, this riparian vegetation is not zoned for a forest land related use. Therefore, the project would not conflict with existing zoning, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. No impact would result in this regard and this topic will not be further analyzed in the EIR.

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

Less Than Significant Impact. On-site riparian vegetation is located along the eastern boundary of the project site, along Serrano Creek and may be considered forest land (although not zoned for forest land) based on Public Resources Code Section 12220(g). The project would disturb approximately 1.91 acres of riparian vegetation (potential forest land) (within Tentative Tract Map Lot 13). However, project implementation would also preserve the remainder of riparian habitat on-site (located throughout Lot 18), which would also serve as forest land. Additionally, as discussed in Response 4.4(c), project-related impacts to all species and habitats (i.e., riparian) receiving regulatory coverage under the NCCP would be considered mitigated to a less than significant level following compliance with Mitigation Measure BIO-2, which requires compliance with the NCCP and its associated Implementing Agreement. Therefore, in consideration of the proposed mitigation and the remaining vegetation that would be preserved on-site throughout Lot 18, the loss of riparian habitat would result in less than significant impacts and this topic will not be further addressed in the EIR.

4.2(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?

Less Than Significant Impact. As no portion of the project site is currently designated Farmland, project implementation would not cause conversion of currently designated Farmland to non-agricultural use. Project implementation would not involve the conversion of forest land to non-forest use, other than those changes discussed in Response 4.2(d) above. The project would not result in any other changes in the existing environment that would result in the conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. Those impacts are less than significant and this topic will not be further discussed in the EIR.

4.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	✓			
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	✓			
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	✓			
d. Expose sensitive receptors to substantial pollutant concentrations?	✓			
e. Create objectionable odors affecting a substantial number of people?			✓	

The City's *CEQA Significance Thresholds Guide* reflects the *CEQA Guidelines* Appendix G Thresholds outlined above, with the exception of the following:

- A project will be considered to result in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) where the incremental effect of the project emissions, considered together with past, present, and reasonably anticipated further project emissions, increase the level of any criteria pollutant above the existing ambient level.

Impact Analysis

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

Potentially Significant Impact. The project area is located within the South Coast Air Basin (SCAB), regulated by the South Coast Air Quality Management District (SCAQMD). The United States Environmental Protection Agency (EPA) and California Air Resources Board (CARB) have classified the SCAB as a non-attainment area for ozone and particulate matter per the National and California Ambient Air Quality Standards (AAQS). Further review within the EIR is necessary to evaluate whether the project conflicts with or obstructs implementation of the *2007 Air Quality Management Plan for the South Coast Air Basin* (*2007 AQMP*). Specifically, the project will be analyzed for consistency with the *2007 AQMP*, and the goals, objectives, and assumptions in the *2007 AQMP* to achieve the Federal and State air quality standards. According to the SCAQMD *CEQA Air Quality Handbook*, in order to determine consistency with the *2007 AQMP*, the following main criteria must be addressed:

Criterion 1:

- *Would the project result in an increase in the frequency or severity of existing air quality violations?*
- *Would the project cause or contribute to new air quality violations?*
- *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

Criterion 2:

- *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?*
- *Would the project implement all feasible air quality mitigation measures?*
- *Would the project be consistent with the land use planning strategies set forth in the AQMP?*

Due to the amount of proposed development, further review within the EIR is necessary to confirm the project's status in terms of compliance and/or conflict with current SCAQMD guidelines.

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

Potentially Significant Impact. The OSA PEIR concluded that the estimated daily operational emissions resulting from buildout of the OSA would exceed the SCAQMD recommended thresholds of significance for CO, VOC, NOX, and PM_{10}. The exceedance of the SCAQMD thresholds for these criteria pollutants is primarily due to the increase in motor vehicles traveling to and from the new land uses within the development sites. Furthermore, the project-level Air Quality Analysis (LSA Associates, December 2009) found that long-term operational characteristics of the project would result in an exceedance of the SCAQMD thresholds for reactive organic compounds starting in the year 2016.

Construction of the project would result in pollutant emissions from three different sources: (1) short-term construction emissions from stationary and mobile sources; (2) long-term mobile emissions from trucks and vehicles traveling to and from the site once the project is operational; and (3) long-term stationary emissions from power and gas consumption and machinery and equipment on-site. The greatest potential for air quality impacts from the project would be attributed to mobile source emissions due to the nature of the project and the amount of trips that would be generated. The project's potential air quality impacts on a local and regional level requires an evaluation pursuant to the SCAQMD and CARB requirements and methodology. Additional analysis and air quality modeling within the EIR is necessary to quantify potential project-related air quality impacts (both short-and long-term) and identify appropriate mitigation measures that would be effective in reducing pollutant emissions.

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

Potentially Significant Impact. Refer to Responses 4.3(a) and 4.3(b).

4.3(d) Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact. Sensitive populations (i.e., children, senior citizens, and acutely or chronically ill people) are more susceptible to the effects of air pollution than are the general population. Land uses considered sensitive receptors typically include residences, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes. Sensitive receptors within and in proximity to the project area include existing residences, parks, and schools. Grading and excavation operations may have air quality impacts in the absence of mitigation. Construction and operation of the project would also increase vehicle trips on area roadways and result in associated air pollutants.

Stationary source air quality impacts to sensitive receptors are analyzed utilizing the SCAQMD's Localized Significance Thresholds (LST) methodology. The LST methodology assists lead agencies in analyzing localized impacts associated with project-specific level proposed projects. The SCAQMD provides the LST lookup tables for one-, two-, and five-acre projects emitting CO, NO_X, or PM_{10}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over five acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. Mobile source air quality impacts to sensitive receptors are analyzed utilizing local carbon monoxide (CO) standards. CO concentrations are a direct function of vehicle idling time and traffic flow conditions. The project's Traffic Study will be utilized in the analysis of CO hotspots. These impacts require emissions quantification and additional analysis in the EIR to assess their level of significance.

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

Less Than Significant Impact. Construction activities associated with the project may generate detectable odors from heavy-duty equipment exhaust. The nearest sensitive receptors to active construction areas on the project site are located approximately 200 feet south of the proposed public park (Lot 17), approximately 315 feet east of (Lot H), and approximately 100 feet west of the proposed residential uses (Lot 12). Construction-related impacts would be short-term in nature and would cease upon project completion. Thus, given the distance to the sensitive receptors and the nature of construction-related odors, the project would not result in the creation of objectionable odors affecting a substantial number of people. This topic will not be further addressed in the EIR.

The existing on-site IRWD facility (proposed to remain on-site) does not currently create any offensive odors, and would not result in any new impacts associated with objectionable odors, as the project would not result in the alteration of this facility. Therefore, as no odors currently exist and no new odors would result with regard to the existing IRWD facility, no impacts would occur in this regard and this topic will not be further addressed in the EIR.

4.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?		✓		
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		✓		
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		✓		
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			✓	
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?		✓		

Biological assessments of the project site were conducted for two study areas, by two consultants, as follows:

Planning Areas 13 and 17 (PAs 13 and 17) – PCR Services Corporation

- *Results of the Biological Constraints Analysis Conducted for the 19.7-Acre Proposed City Hall and Park Project Site*, May 27, 2008;
- *Investigation of Jurisdictional Wetlands and Waters of the U.S. Lake Forest City Hall Project Site*, May 29, 2008;
- *Spring 2008 Sensitive Plant Surveys for the 19.7-Acre Proposed City Hall and Park Project Site*, August 26, 2008;
- *Results of Focused Least Bell's Vireo Surveys for the 19.7-Acre Proposed City Hall and Park Project Site,* August 26, 2008;
- *Results of the Focused Coastal California Gnatcatcher Surveys for the 19.7-Acre Proposed City Hall and Park Project Site*, September 2, 2008; and
- *Results of Focused Southwestern Willow Flycatcher Surveys for the 19.7-Acre Proposed City Hall and Park Project Site*, September 9, 2008.

Balance of Project Site (IRWD Area) - Harmsworth Associates

- *Biological Report for the Lake Forest IRWD Site*, September 2008; and
- *California Gnatcatcher Report for the Lake Forest IRWD Site*, September 2008.

For purposes of the following analyses, these reports shall be collectively referred to as the Biological Reports. Site-specific assessments shall refer to the relevant study area (i.e., PAs 13 and 17 or IRWD Area), as appropriate. The Biological Reports are included in their entirety in Appendix B, *Biological Reports*.

Impact Analysis

4.4(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?

Less Than Significant Impact With Mitigation Incorporated.

Special Status Plant Species

Table 4.4-1, *Special Status Plant Species Known to Occur in the Project Vicinity*, outlines the 48 special status plant species known to occur in the project vicinity, and provides information on their status, relationship to NCCP, habitat, likelihood of occurrence, and focused survey requirements. As indicated in Table 4.4-1, of the 48 special status plant species known to occur in the project vicinity, 45 were identified as having some potential to occur on the project site.

IRWD Study Area

As indicated in Table 4.4-1, 13 of the 48 special status plant species known to occur in the project vicinity were identified as having some (i.e., low or medium) potential to occur on the IRWD study area. None of the plant species are Federal/State listed threatened/endangered species. Thirty-five (35) of the 48 special status plant species known to occur in the project vicinity were identified as having no (i.e., unlikely) potential to occur on the IRWD study area.

The September 4, 2008 survey fell within blooming periods for two (2) of the 13 special status plant species having some potential to occur on the IRWD study area. In addition, two (2) other species are easily detected year-round due to their size and distinctive appearance. Therefore, focused surveys were conducted for the following four (4) special status plant species having some potential to occur on the IRWD study area:

- Fish's milkwort - *Polygala cornuta var. fishiae*;
- White-rabbit tobacco - *Pseudognaphalium leucocephalum*;
- Nuttall's scrub oak - *Quercus dumosa*; and
- Coulter's Matilija poppy - *Romneya coulteri*.

None of these special status plant species were observed on the IRWD survey area during the September 2008 survey. Therefore, project implementation would result in less than significant impacts regarding these special status plant species and no further analysis is required. It is noted, Nuttall's scrub oak (*Quercus dumosa*) and Coulter's Matilija poppy (*Romneya coulteri*) are NCCP/HCP-listed "Identified Species," which are fully covered by the City's participation in the NCCP/HCP.

Table 4.4-1
Special Status Plant Species Known to Occur in the Project Vicinity

Scientific Name *FAMILY*	Common Name	Status[2]	NCCP[3]	Comments/Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site[4]	Focused Survey Conducted	Occurrence On-site[4]	Focused Survey Conducted
Brodiaea filifolia *LILIACEAE*	Thread-leaved Brodiaea	Fed: FT State: SE CNPS: 1B	NC	Bulbiferous herb occurs on clay, or silty alkaline substrates on edges of vernal pools, valley and foothill grasslands, coastal sage scrub, chaparral, and cismontane woodlands, below 2,000 feet. Blooms March through June.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Calochortus catalinae *LILIACEAE*	Catalina Mariposa Lily	Fed: None State: None CNPS: 4.2	C	Bulbiferous herb. Blooms May through June in heavy soils, open grassy slopes and opening in brush in chaparral, coastal sage scrub, and valley and foothill grassland from 15 to 700 meters.	Low	No	Medium	Yes; Not observed
Calochortus weedii var. intermedius *LILIACEAE*	Intermediate (Foothill) Mariposa Lily	Fed: None State: None CNPS: 1B.2	CC	Bulbiferous herb blooms from May through July on dry rocky open slopes and hills in chaparral, coastal sage scrub, valley and foothill grassland from 100 to 855 meters.	Medium	No	Medium	Yes; Not observed
Caulanthus simulans *BRASSICACEAE*	Payson's Jewel Flower	Fed: None State: None CNPS: 4.2	NC	Annual herb found in chaparral and coastal scrub with sandy or granitic soils from 90 to 2,200 meters. Blooms from March through May.	Medium	No	Medium	Yes; Not observed
Comarostaphylis diversifolia ssp. diversifolia *ERICACEAE*	Summer Holly	Fed: None State: None CNPS: 1B.2	NC	Evergreen shrub occurs in chaparral and cismontane woodland from 30 to 550 meters. Blooms April through June.	Unlikely	Yes; Not observed	Medium	Yes; Not observed
Convolvulus simulans *CONVOLVULACEAE*	Small-flowered morning-glory	Fed: None State: None CNPS: 4.2	NC	Annual herb occurs from Baja north to San Luis Obispo County and inland to Riverside and Kern Counties, on wet clay, serpentine seeps and ridges, near rock outcrops, south-facing slopes in shallow or clay soils on edges of coastal sage scrub and perennial grasslands. Blooms March through June.	Unlikely	No suitable habitat	Unlikely	No suitable habitat
Dichondra occidentalis *CRASSULACEAE*	Western dichondra	Fed: None State: None CNPS: 4.2	NC	Rhizomatous herb is a fire follower, occurs in rock outcrops, under shrubs in loamy alluvium and gravely clay loam in southern mixed chaparral, Diegan sage scrub, oak woodland and grasslands. Blooms January through July. From 50 to 500 meters.	Medium	No	Medium	Yes; Not observed
Dudleya multicaulis *CRASSULACEAE*	Many Stemmed Dudleya	Fed: None State: None CNPS: 1B.2	NC, Species of Interest	Perennial herb flowers from April through July. Microhabitat is rocky outcrops, clay soil in chaparral, coastal sage scrub, valley and foothill grassland.	Unlikely	No suitable habitat	Medium	Yes; Not observed

Table 4.4-1 [continued]
Special Status Plant Species Known to Occur in the Project Vicinity

Scientific Name *FAMILY*	Common Name	Status[2]	NCCP[3]	Comments/Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site[4]	Focused Survey Conducted	Occurrence On-site[4]	Focused Survey Conducted
Harpagonella palmeri BORAGINACEAE	Palmer's grapplinghook	Fed: None State: None CNPS: 4.2	NC	Moderate potential to occur. Occurs on clay soils, dry slopes and mesas in coastal sage scrub openings and grasslands from 20 to 955 meters. Flowers March to April. More readily found after fires.	Low	No	Unlikely	No suitable habitat
Horkelia cuneata ssp. puberula ROSACEAE	Mesa Horkelia	Fed: None State: None CNPS: 1B.1	NC	Perennial herb found in dry sandy soils in the outer coast ranges in chaparral, coastal scrub, and cismontane woodland in sandy or gravelly soils. Blooms from February through July from 70 to 810 meters.	Medium	No	Medium	Yes; Not observed
Imperata brevifolia POACEAE	California Satintail	Fed: None State: None CNPS: 2.1	NC	Rhizomatous herb found in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, and riparian scrub below 500 meters. Flowers from September through May.	Unlikely	Yes; Not observed	Medium	Yes; Not observed
Lepechinia cardiophylla LAMIACEAE	Heart-Leaved Pitcher Sage	Fed: None State: None CNPS: 2.1	C	Aromatic shrub occurs in chaparral, closed-cone coniferous forest and cismontane woodland from 520 to 1,370 meters. Blooms from April through July.	Unlikely	Yes; Not observed	Medium	Yes; Not observed
Lepidium virginicum var. robinsonii BRASSICACEAE	Robinson's peppergrass	Fed: None State: None CNPS: 1B.2	NC	Annual herb grows in openings of coastal sage and chaparral, typically away from the coast. Few recent collections of these species from cismontane southern California. Blooms January through July below 885 meters.	Medium	No	Medium	Yes; Not observed
Microseris douglasii ssp. platycarpha ASTERACEAE	Small-flowered Microseris	Fed: None State: None CNPS: 4.2	NC	Annual herb blooms from March through May on clay soils in coastal sage scrub, valley and foothill grasslands, and cismontane woodland habitats from 15 to 1,070 meters.	Unlikely	No suitable habitat	Unlikely	No suitable habitat
Mondarella hypoleuca ssp. lanata LAMIACEAE	Felt-Leaved Monardella	Fed: None State: None CNPS: 1B.2	NC	Rhizomatous herb found in chaparral and cismontane woodland from 300 to 1,575 meters. Blooms from June through August.	Unlikely	Yes; Not observed	Medium	Yes; Not observed
Mondarella macrantha ssp. hallii LAMIACEAE	Hall's Monardella	Fed: None State: None CNPS: 1B.3	NC	Rhizomatous herb found in chaparral, broadleaf upland forest, lower montane coniferous forest and cismontane woodland from 730 to 2,195 meters. Blooms from June through August	Unlikely	Yes; Not observed	Medium	Yes; Not observed

Table 4.4-1 [continued]
Special Status Plant Species Known to Occur in the Project Vicinity

Scientific Name *FAMILY*	Common Name	Status[2]	NCCP[3]	Comments/Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site[4]	Focused Survey Conducted	Occurrence On-site[4]	Focused Survey Conducted
Nolina cismontana *LILIACEAE*	Chaparral beargrass	Fed: None State: None CNPS: 1B.2	NC	Evergreen shrub distributed from western Ventura County south through Simi Hills, Santa Ana Mountains to the foothills of Palomar and Cuyamaca Mountains in San Diego County. Blooms from April through June.	Unlikely	Yes; Not observed	Unlikely	No suitable habitat
Pentachaeta aurea *ASTERACEAE*	Golden-flowered Pentachaeta	Fed: None State: None CNPS: 1B.1	NC	Annual herb occurs in Los Angeles, Orange, Riverside, San Bernardino, San Diego Counties, Baja California. Habitat includes cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Blooms March through June from 75 to 520 meters.	Medium	No	Unlikely	No suitable habitat
Piperia cooperi *ORCHIDACEAE*	Chaparral rein orchid	Fed: None State: None CNPS: 4.2	NC	Perennial herb occurs in chaparral, cismontane woodland, valley and foothill grassland from 15 to 1,585 meters. Blooms March through June.	Low	No	Unlikely	No suitable habitat
Polygala cornuta var. fishiae *POLYGALACEAE*	Fish's Milkwort	Fed: None State: None CNPS: 4.3	NC	Deciduous shrub occurs in Los Angeles, Orange, Riverside, Santa Barbara, San Diego, Ventura, Baja California in chaparral, cismontane woodland, and riparian woodland. Blooms May through August from 100 to 100 meters.	Low	Yes; Not observed	Unlikely	No suitable habitat
Pseudognaphalium leucocephalum *ASTERACEAE*	White-Rabbit tobacco	Fed: None State: None CNPS: 2.2	NC	Perennial herb occurs in sandy or gravelly soil in coastal scrub, chaparral, riparian woodland, and cismontane woodland below 2,000 meters. Blooms from July through December.	Medium	Yes; Not observed	Medium	Yes; Not observed
Quercus dumosa *FAGACEAE*	Nuttall's scrub oak	Fed: None State: None CNPS 1B.1	C	Evergreen shrub occurs in sandy soils in coastal scrub, chaparral and closed cone coniferous forest from 15 to 800 meters. Flowers from February through April.	Medium	Yes; Not observed	Medium	Yes; Not observed
Romneya coulteri *PAPAVERACEAE*	Coulter's Matilija Poppy	Fed: None State: None CNPS: 4.2	C	Rhizomatous herb occurs in Los Angeles, Orange, Riverside, San Diego in chaparral, coastal scrub / often in burns. Blooms March through July. Easy to identify year round.	Low	Yes; Not observed	Unlikely	No suitable habitat
Satureja chandleri *LAMIACEAE*	San Miguel Savory	Fed: None State: None CNPS 1B.2	NC	Small shrub occurs in chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grasslands in rocky, gabbroic or metavolcanic soils from 120 to 1,075 meters. Blooms from May through July.	Unlikely	Yes; Not observed	Medium	Yes; Not observed

Table 4.4-1 [continued]
Special Status Plant Species Known to Occur in the Project Vicinity

Scientific Name *FAMILY*	Common Name	Status[2]	NCCP[3]	Comments/Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site[4]	Focused Survey Conducted	Occurrence On-site[4]	Focused Survey Conducted
Senecio aphanactis *ASTERACEAE*	Rayless raywort	Fed: None State: None CNPS 2.2	NC	Annual herb occurs in coastal sage scrub from Contra Costa County to Baja California from 15 to 800 meters. Known from lower Hicks Canyon and UCI ecological preserve. Blooms January through April.	Medium	No	Medium	Yes; Not observed
Symphyotrichum defoliatum *SUNFLOWER*	San Bernardino aster	Fed: None State: None CNPS 1B.2	NC	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, and grassland; occurs in vernally mesic grassland or near ditches, streams, and springs in disturbed areas.	Unlikely	Yes; Not observed	Medium	Yes; Not observed
Cupressus forbesii *CYPRESS*	Tecate cypress	Fed: None State: None CNPS 1B.1	C	Closed-cone coniferous forest, chaparral; occurs primarily on north-facing slopes and groves often associated with chaparral.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Centromadia parryi ssp. *Australis* *SUNFLOWER*	southern tarplant	Fed: None State: None CNPS 1B.1	NC	Margins of marshes and swamps, valley and foothill grassland; often occurs in disturbed sites near the coast and in alkaline soils with salt grass.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Chaenactis glabriuscula var. *orcuttiana* *SUNFLOWER*	Orcutt's pincushion	Fed: None State: None CNPS 1B.1	NC	Coastal bluff scrub, coastal dunes.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Helianthus nuttallii ssp. *Parishii* *SUNFLOWER*	Los Angeles Sunflower	Fed: None State: None CNPS 1A	NC	Marshes and swamps (coastal salt and freshwater).	Unlikely	No suitable habitat	Medium	Yes; Not observed
Lasthenia glabrata ssp. *Coulteri* *SUNFLOWER*	Coulter's goldfields	Fed: None State: None CNPS 1B.1	NC	Coastal salt marshes and swamps, playas, vernal pools.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Verbesina dissita *SUNFLOWER*	Crownbeard	Fed: FT State: ST CNPS 1B.2	NC	Maritime chaparral (mainly) and coastal scrub; occurs on steep, rocky, primarily north-facing slopes within 1.5 miles of the ocean.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Aphanisma blitoides *GOOSEFOOT*	Aphanisma	Fed: None State: None CNPS 1B.2	NC	Coastal bluff scrub, coastal dunes, coastal scrub.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Atriplex coulteri *GOOSEFOOT*	Coulter's saltbush	Fed: None State: None CNPS 1B.2	NC	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland/ alkaline or clay.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Atriplex pacifica *GOOSEFOOT*	South coast saltscale	Fed: None State: None CNPS 1B.2	NC	Coastal bluff scrub, coastal dunes, coastal scrub, playas.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Atriplex parishii *GOOSEFOOT*	Parish's brittlescale	Fed: None State: None CNPS 1B.1	NC	Chenopod scrub, playas, vernal pools.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Atriplex serenana var. davidsonii *GOOSEFOOT*	Davidson's saltscale	Fed: None State: None CNPS 1B.2	NC	Coastal bluff scrub, coastal scrub/alkaline.	Unlikely	No suitable habitat	Medium	Yes; Not observed

Table 4.4-1 [continued]
Special Status Plant Species Known to Occur in the Project Vicinity

Scientific Name *FAMILY*	Common Name	Status[2]	NCCP[3]	Comments/Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site[4]	Focused Survey Conducted	Occurrence On-site[4]	Focused Survey Conducted
Suaeda esteroa *GOOSEFOOT*	Estuary seablite	Fed: None State: None CNPS 1B.2	NC	Coastal salt marshes and swamps.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Dudleya cymosa ssp. ovatifolia *STONECROP*	Santa Monica Mountains dudleya	Fed: None State: None CNPS 1B.2	C	Chaparral and coastal scrub; occurs in canyons on sedimentary conglomerates, primarily on north facing slopes.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Dudleya stolonifera *STONECROP*	Laguna Beach dudleya	Fed: None State: None CNPS 1B.1	C	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/rocky.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Dudleya viscida *STONECROP*	sticky dudleya	Fed: None State: None CNPS 1B.2	NC	Coastal scrub, coastal bluff scrub, and chaparral; occurs on north and south-facing cliffs and banks.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Euphorbia misera *SPURGE*	Cliff spurge	Fed: None State: None CNPS 2.2	C	Coastal bluff scrub, coastal scrub/rocky.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Nama stenocarpum *WATERLEAF*	Mud nama	Fed: None State: None CNPS 2.2	NC	Marshes and swamps; occurs on lake shores, river banks, and intermittently wet areas.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Phacelia suaveolens ssp. *keckii* *WATERLEAF*	Santiago Peak phacelia	Fed: None State: None CNPS 1B.3	NC	Closed-cone coniferous forest and chaparral in open areas and sometimes along creeks. Lowest recorded occurrence is 1,799 feet above msl.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Sidalcea neomexicana *MALLOW*	Salt Spring checkerbloom	Fed: None State: None CNPS 2.2	NC	Alkali playas, brackish marshes, chaparral, coastal scrub, lower montane coniferous forest, and Mojavean Desert scrub in alkali springs and marshes.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Chorizanthe parryi var. *fernandina* *BUCKWHEAT*	San Fernando Valley spineflower	Fed: None State: None CNPS 1B.1	NC	Coastal scrub on sandy soils.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Nemacaulis denudata var. *denudate* *BUCKWHEAT*	coast woolly-heads	Fed: None State: None CNPS 1B.2	NC	Coastal dunes.	Unlikely	No suitable habitat	Medium	Yes; Not observed
Nolina cismontane *LILY*	Chaparral nolina	Fed: None State: None CNPS 1B.2	NC	Chaparral, coastal sage scrub, sandstone or gabbro.	Unlikely	No suitable habitat	Medium	Yes; Not observed

Definitions - status:
Fed = federal
FE = federal endangered
FT = federal threatened
FPE = federally proposed for listing as endangered
FPT = federally proposed for listing as threatened
FC = federal candidate species
FSC = federal special concern species
state = state of California
SE = state endangered
ST = state threatened
SCE = state candidate for listing as endangered
SCT = state candidate for listing as threatened
SC = state species of concern
FP = fully protected species
none = no federal or state listing

NCCP status:
covered species = (C)
conditionally covered species (CC)
non covered species (NC)

Occurrence on-site:
Occurs = known or recorded to occur on-site
Potential = could occur due to presence of suitable habitat on-site but Yes; Not observed
Unlikely = probably does not occur due to limited suitable habitat on-site and/or not detected
low = possible but unlikely to occur on-site
medium = could occur on-site
high = probably does occur on-site but not recorded during recent surveys

Sources: PCR Services Corporation, *Results of the Biological Constraints Analysis Conducted for the 19.7-Acre Proposed City Hall and Park Project Site*, May 27, 2008; PCR Services Corporation, *Spring 2008 Sensitive Plant Surveys for the 19.7-Acre Proposed City Hall and Park Project Site*, August 26, 2008; and Harmsworth Associates, *Biological Report for the Lake Forest IRWD Site*, September 2008.

Additionally, focused surveys were conducted for another eight (8) species, although these were identified as having an unlikely potential to occur within the IRWD study area: California satintail (*Imperata brevifolia*); felt-leaved monardella (*Monardella hypoleuca ssp. lanata*); Hall's Monardella (*Monardella macrantha ssp. hallii*); San Bernardino Aster (*Symphyotrichum defoliatum*); summer holly (*Comarostaphylis diversifolia*); heart-leaved pitcher sage (*Lepechinia cardiophylla*); chaparral beargrass (*Nolina cismontana*); and San Miguel Savory (*Satureja chandleri*). None of these special status plant species were observed on the IRWD survey area during the September 2008 survey.

Focused surveys have not been conducted for the following nine (9) of the 13 special status plant species identified as having some potential to occur on the IRWD study area:

- Catalina mariposa lily;
- Intermediate (Foothill) mariposa lily (CC);
- Payson's jewel flower;
- Western dichondra;
- Palmer's grapplinghook;
- Mesa horkelia;
- Robinson's peppergrass;
- Golden-flowered pentachaeta;
- Chaparral rein orchid; and
- Rayless raywort.

Therefore, Mitigation Measure BIO-1 requires that the Applicant conduct focused surveys for these nine (9) special status plant species on the IRWD study area, prior to the issuance of a grading permit, in order to determine their presence or absence. Of the nine species outlined above, only the Intermediate (Foothill) mariposa lily is an NCCP/HCP "Identified Species"; refer to the *Natural Community Conservation Plan & Habitat Conservation Plan* Section below.

Planning Areas 13 and 17

As indicated in Table 4.4-1, 40 of the 48 special status plant species known to occur in the project vicinity were identified as having some (i.e., low or medium) potential to occur on PAs 13/17. Only one of the plant species is Federal or State listed; Thread-leaved Brodiaea (*Brodiaea filifolia*) is a Federally listed threatened species and State listed endangered species. Eight (8) of the 48 special status plant species known to occur in the project vicinity were identified as having no (i.e., unlikely) potential to occur on PAs 13/17.

Collectively, survey dates encompassed the flowering periods of all 40 endangered, threatened, and sensitive plants potentially occurring on PAs 13/17, except Nuttall's scrub oak (*Quercus dumosa*), which is a conspicuous tree/shrub that can be distinguished from the common scrub oak (*Quercus berberidifolia*) using vegetative characteristics. None of the special status plant species were observed on PAs 13/17. Therefore, project implementation would result in less than significant impacts regarding these special status plant species and no further analysis is required. Additionally it is noted, the following special status plant species are NCCP/HCP-listed "Identified Species," which are fully covered by the City's participation in the NCCP/HCP:

- Catalina Mariposa Lily - *Calochortus catalinae*;
- Intermediate (Foothill) Mariposa Lily - *Calochortus weedii* var. *intermedius*;
- Heart-Leaved Pitcher Sage - *Lepechinia cardiophylla*;
- Nuttall's scrub oak - *Quercus dumosa*;
- Tecate cypress - *Cupressus forbesii*;
- Santa Monica Mountains dudleya - *Dudleya cymosa* ssp. *Ovatifolia*;

- Laguna Beach dudleya - *Dudleya stolonifera*;
- Sticky dudleya - *Dudleya viscida*; and
- Cliff spurge - *Euphorbia misera*.

County of Orange Central and Coastal Subregion Natural Community Conservation Plan & Habitat Conservation Plan

The project site lies within the Natural Community Conservation Plan & Habitat Conservation Plan (NCCP), which addresses protection and management of covered habitats and species, and mitigates anticipated impacts to those habitats and species, on a programmatic, sub-regional level, rather than on a project-by-project, single species basis. The NCCP established a habitat Reserve of over 37,000 acres for the protection of covered species and habitats. The project site is not located within the NCCP Reserve. The NCCP also identified Impact Areas where impacts to species and habitats receiving regulatory coverage under the NCCP would be authorized. The project site is located within an NCCP Impact Area, and specifically within the Coastal Subarea of the NCCP. The NCCP's habitat Reserve system and adaptive management program is the cornerstone for the take authorization and habitat modification approvals issued by CDFG and USFWS, which authorized "take" of 39 "Identified Species" of plants and animals, as shown on Table 1 of the Harmsworth Associated September 2008 Biological Report, including:

- 3 "Target" wildlife species;
- 16 "Covered" wildlife species;
- 8 "Covered" plant species;
- 10" Conditionally Covered" wildlife species; and
- 5 "Covered" habitats.

A projects development impacts within designated Impact Areas outside of the NCCP Reserve to "Identified Species" and "covered habitats" do not require further mitigation above the mitigation provided for by the NCCP/HCP. The NCCP Reserve system, adaptive management program, and other NCCP measures were determined by the EIR/EIS to fully mitigate "take" of these species and habitats resulting from development projects in compliance with the Implementation Agreement. For "Conditionally Covered" species, additional mitigation measures have been specified in the Implementation Agreement.

Conclusion

Focused surveys have been conducted for all 40 of the special status plant species identified as having some potential to occur on PAs 13/17; refer to Table 4.4-1. None of the special status plant species were observed on PAs 13/17; therefore, project implementation would result in less than significant impacts and no further analysis is required.

Focused surveys have been conducted for four (4) of the special status plant species identified as having some potential to occur on the IRWD study area: Fish's milkwort; White-rabbit tobacco; Nuttall's scrub oak; and Coulter's Matilija poppy. None of these special status plant species were observed on the IRWD study area; therefore, project implementation would result in less than significant impacts in this regard.

Focused surveys have not been conducted for nine (9) of the 13 special status plant species identified as having some potential to occur on the IRWD study area. Of these nine species, only the Intermediate (Foothill) mariposa lily is an NCCP/HCP Identified species (i.e., "Conditionally Covered"). If this special status plant species is observed during the focus surveys, then compliance with Mitigation Measure BIO-2 would be required. Mitigation Measure BIO-2 would require compliance with the NCCP and its associated Implementing Agreement. Options to mitigate the loss of a covered species include payment of an in-lieu fee. Project-related impacts to the mariposa lily, which receives regulatory coverage under the NCCP would be considered mitigated to a less than significant level following compliance with Mitigation Measure BIO-2. The potential project impacts to this "Conditionally Covered" species would occur within a designated Impact Area that is outside of the NCCP Reserve. Therefore, the project would not require further mitigation beyond that required by the NCCP and its associated Implementing Agreement. With implementation of Mitigation Measure BIO-2 requiring compliance with the NCCP, impacts to Intermediate (Foothill) mariposa lily on the IRWD study area would be reduced to less than significant levels.

Focused surveys have not been conducted for eight (8) special status plant species identified as having some potential to occur on the IRWD study area, which are not NCCP Identified species: Catalina mariposa lily; Payson's jewel flower; Western dichondra; Palmer's grapplinghook; Mesa horkelia; Robinson's peppergrass; Golden-flowered pentachaeta; Chaparral rein orchid; and Rayless raywort. If these special status plant species are observed during the focus surveys, then compliance with Mitigation Measure BIO-3 would be required. Mitigation Measure BIO-3 would require adherence to requirements of the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA), if applicable. If the species is not protected under FESA or CESA, but is otherwise protected through another regulatory requirement, the Applicant would be required to provide suitable replacement habitat at a minimum ratio of 1:1. The Applicant may also be required to prepare a mitigation plan to demonstrate that appropriate long-term habitat management is provided. The mitigation plan must be prepared in consultation with and receive the approval of the agency regulating the species or habitat. The mitigation plan should provide among other things, biological monitoring during grading activities and fencing of any area that would not be disturbed. With implementation of Mitigation Measure BIO-3 requiring compliance with FESA/CESA, impacts to these plant species on the IRWD study area would be reduced to less than significant levels.

Overall, with implementation of Mitigation Measure BIO-1 (and potentially Mitigation Measures BIO-2 and BIO-3, as necessary), project development on the IRWD survey area would not result in substantial adverse effects on any plant species identified as a candidate, sensitive, or special status species. This topic will not be further discussed in the EIR.

Special Status Wildlife Species

Table 4.4-2, *Special Status Wildlife Species Known to Occur in the Project Vicinity*, outlines the 47 special status wildlife species known to occur in the project vicinity, and provides information on their status, relationship to NCCP, habitat, likelihood of occurrence, and focused survey requirements. Based on the Biological Reports, five (5) State/Federally listed threatened/endangered wildlife species were identified as having a potential to occur within the project site. As indicated in Table 4.4-2, of the 47 special status wildlife species known to occur in the project vicinity, 37 were identified as having some potential to occur and seven (7) were observed on the project site.

Table 4.4-2
Special Status Wildlife Species Known to Occur in the Project Vicinity

Scientific Name	Common Name	Status	NCCP	Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site	Focused Survey Conducted	Occurrence On-site	Focused Survey Conducted
Amphibians								
Spea hammondii	western spadefoot toad	Fed: None State: None DFG: CSC CNDDB Ranked	NC	grassland, open habitats with sandy or gravelly soil; temporary rainpools for breeding	Unlikely	No suitable habitat.	Unlikely	No suitable habitat.
Reptiles								
Phrynosoma coronatum (blainvillei)	Coast (San Diego) horned lizard	Fed: None State: None DFG: CSC CNDDB Ranked	C	sandy washes and open sandy areas within coastal sage scrub, grassland, chaparral, oak and riparian woodland	Potential	No	Potential	No
Eumeces skiltonianus interparietalis	Coronado skink	Fed: None State: None DFG: CSC CNDDB Ranked	C	mesic areas of coastal sage scrub, chaparral, grasslands and woodlands; heavily forested areas and dense brush avoided	Potential	No	Unlikely	No suitable habitat.
Cnemidophorus tigris stejnegeri	coastal western whiptail	Fed: None State: None CNDDB Ranked	C	semiarid habitats with open sparsely vegetated areas, scrub, chaparral, grassland and woodland habitats	Potential	No	Unlikely	No suitable habitat.
Cnemidophorus hyperytha	orange-throated whiptail	Fed: None State: None DFG: CSC CNDDB Ranked	C	open, sparsely covered land, often with well-drained sandy or loose soils in coastal sage scrub, grassland, chaparral, oak woodland and riparian habitats	Potential	No	Potential	No
Anniella pulchra pulchra	silvery legless lizard	Fed: None State: None DFG: CSC CNDDB Ranked	NC	chaparral, oak woodland, coastal sage scrub	Potential	No	Unlikely	No suitable habitat.

Table 4.4-2 [continued]
Special Status Wildlife Species Known to Occur in the Project Vicinity

Scientific Name	Common Name	Status	NCCP	Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site	Focused Survey Conducted	Occurrence On-site	Focused Survey Conducted
Charina trivirgata roseofusca	coastal rosy boa	Fed: None State: None CNDDB Ranked	C	Occurs in coastal areas, occurs in rocky chaparral-covered hillsides and canyons	Potential	No	Unlikely	No suitable habitat.
Salvadora hexalepis virgultea	coast patch-nosed snake	Fed: None State: None DFG: CSC CNDDB Ranked	NC	associated with brushy or shrubby vegetation	Potential	No	Potential	No
Crotalus ruber rubber	northern red-diamond rattlesnake	Fed: None State: None DFG: CSC CNDDB Ranked	C	chamise, coastal sage scrub, desert slope scrub and other habitats with heavy brush associated large rocks or boulders	Potential	No	Potential	No
Taricha torosa torosa	Coast Range newt	Fed: None State: None DFG: CNDDB Ranked	NC	- -	Unlikely	No suitable habitat.	Potential	No
Thamnophis hammondii	Two-striped garter snake	Fed: None State: None DFG: CNDDB Ranked	NC	- -	Unlikely	No suitable habitat.	Potential	No
Birds								
Circus cyaneus	northern harrier	Fed: None State: None DFG: CSC CNDDB Ranked	C	grassland, marshes, agricultural land, open areas in scrub and chaparral; ground or shrub nesting	Potential, foraging only	No	Potential	No
Elanus leucurus	White-tailed kite	Fed: None State: None DFG: FP CNDDB Ranked	NC	forages in grasslands; nests and roosts in oak and riparian woodland	Potential, foraging only	No	Potential	No

Table 4.4-2 [continued]
Special Status Wildlife Species Known to Occur in the Project Vicinity

Scientific Name	Common Name	Status	NCCP	Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site	Focused Survey Conducted	Occurrence On-site	Focused Survey Conducted
Accipiter striatus	Sharp-shinned hawk	Fed: None State: None DFG: WL CNDDB Ranked	C	wide variety of habitats used by wintering and migrating birds, but mostly associated with woodland and scrubland; breeds in mountains	Potential, foraging only	No	Unlikely	No suitable habitat
Accipiter cooperi	Cooper's hawk	Fed: None State: None DFG: WL CNDDB Ranked	NC	mature forests, open woodlands, wood edges, river groves, riparian woodland	Occurs, non-breeding	Yes; Observed.	Unlikely	No suitable habitat.
Buteo regalis	ferruginous hawk	Fed: None State: None DFG: WL FW: BCC CNDDB Ranked	NC	plains, prairies, grasslands	Potential, foraging only	No	Unlikely	No suitable habitat
Aquila chrysaetos	Golden eagle	Fed: None State: None DFG: FP FW: BCC CNDDB Ranked	CC	Open mountains, foothills, plains, open country	Potential, foraging only	No	Potential	No
Falco columbarius	Merlin	Fed: None State: None DFG: WL CNDDB Ranked	NC	nests in open woodlands, savanna, does not breed in southern California, woodlands, open areas in winter, migration	Occurs, non-breeding	No- but observed.	Unlikely	No suitable habitat
Falco peregrinus anatum	American peregrine falcon	Fed: None State: SE DFG: FP FWS: BCC CNDDB Ranked	C	nest on cliffs or rock outcroppings, usually near water; forages over open country (grassland, scrub, marshes)	Potential, foraging only	No	Potential, foraging only	No

Table 4.4-2 [continued]
Special Status Wildlife Species Known to Occur in the Project Vicinity

Scientific Name	Common Name	Status	NCCP	Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site	Focused Survey Conducted	Occurrence On-site	Focused Survey Conducted
Athene cunicularia	Burrowing owl	Fed: None State: None DFG: CSC FWS: BCC CNDDB Ranked	NC	grasslands, farmland and other open habitats	Potential	No	Unlikely	No suitable habitat
Asio flammeus	Short-eared owl	Fed: None State: None DFG: CSC CNDDB Ranked	NC	Grasslands	Potential, foraging only	No	Unlikely	No suitable habitat
Asio otus	long-eared owl	Fed: None State: None DFG: CSC CNDDB Ranked	NC	widespread forager; nests in dense woodlands	Potential, foraging only	No	Potential	No
Selasphorus rufus	rufous hummingbird	Fed: None State: None FWS: BCC CNDDB Ranked	NC	Found in a wide variety of habitats that provide nectar-producing flowers; uses valley foothill and riparian woodland, various chaparral habitats and montane meadows. Takes nectar from many species of flowering plants; also eats insects, spiders and tree sap.	Potential	No	Unlikely	No suitable habitat
Eremophila alpestris actia	California horned lark	Fed: None State: None DFG: WL CNDDB Ranked	NC	Open areas with little or no ground cover, such as grassland or ruderal vegetation	Occurs	No- but observed.	Unlikely	No suitable habitat
Campylorhynchus brunneicapillus	Coastal cactus wren	Fed: None State: None DFG: CSC CNDDB Ranked	C	cactus patches and yucca within coastal sage scrub and chaparral habitats	Potential	Yes; Observed.	Unlikely	No suitable habitat

Table 4.4-2 [continued]
Special Status Wildlife Species Known to Occur in the Project Vicinity

Scientific Name	Common Name	Status	NCCP	Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site	Focused Survey Conducted	Occurrence On-site	Focused Survey Conducted
Polioptila californica californica	Coastal California gnatcatcher	Fed: FT State: None DFG: CSC CNDDB Ranked	C	coastal sage scrub	Occurs	Yes; Observed	Potential	Yes; Observed
Lanius ludovicianus	loggerhead shrike	Fed: None State: None DFG: CSC FWS: BCC CNDDB Ranked	NC	grassland, scrub and other open habitats with perching structures; nests in trees and shrubs	Potential	No	Unlikely	No suitable habitat
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	Fed: None State: None DFG: WL CNDDB Ranked	C	grass covered hillsides in coastal sage scrub and chaparral	Potential	No	Unlikely	No suitable habitat
Carduelis lawrencei	Lawrence's goldfinch	Fed: None State: None FWS: BCC CNDDB Ranked	NC	Breeds in open oak or other arid woodland and chaparral, near water, in southern California, occurs in desert riparian, palm oasis, pinyon-juniper, and lower montane habitats. Winters erratically in southern coastal lowlands and Colorado River Valley; can be common locally.	Potential	No	Unlikely	No suitable habitat
Empidonas traillii extimus	Southwestern willow flycatcher	Fed: FE State: SE CNDDB Ranked	NC	- -	Unlikely	No suitable habitat.	Observed	Yes; Not observe (However, considered migrant)
Icteria virens	Yellow-breasted chat	Fed: None State: None DFG: CNDDB Ranked	NC	- -	Unlikely	No suitable habitat.	Observed	No- but observed

Table 4.4-2 [continued]
Special Status Wildlife Species Known to Occur in the Project Vicinity

Scientific Name	Common Name	Status	NCCP	Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site	Focused Survey Conducted	Occurrence On-site	Focused Survey Conducted
Vireo bellii pusillus	Least Bell's vireo	Fed: FE State: SE DFG: CNDDB Ranked	C	dense riparian willow thickets	Unlikely	No suitable habitat	Potential	Yes; Not observed
Dendroica petechia	Yellow warbler	Fed: None State: None DFG: CSC	NC	- -	Unlikely	No suitable habitat	Observed	No- but observed
Mammals								
Macrotus californicus	California leaf-nosed bat	Fed: None State: None DFG: CSC WBWG: High priority CNDDB Ranked	NC	roosts in caves or old mines	Potential	No	Unlikely	No suitable habitat
Lasiurus blossevilli	Western red bat	Fed: None State: None DFG: CNDDB Ranked	NC	- -	Unlikely	No suitable habitat	Potential	No
Nyctinomops macrotis	Big free-tailed bat	Fed: None State: None DFG: CNDDB Ranked	NC	- -	Unlikely	No suitable habitat	Potential	No
Antrozous pallidus	Pallid bat	Fed: None State: None DFG: CSC WBWG: High priority CNDDB Ranked	NC	coastal sage scrub, oak woodland and chaparral; roosts in caves, mines, rock crevices, trees and buildings	Potential	No	Potential	No
Myotis yumanensis	Yuma myotis	Fed: None State: None WBWG: Medium priority CNDDB Ranked		Large colonies, caves, tunnels and buildings in arid areas, forages over water	Potential	No	Unlikely	No suitable habitat

Table 4.4-2 [continued]
Special Status Wildlife Species Known to Occur in the Project Vicinity

Scientific Name	Common Name	Status	NCCP	Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site	Focused Survey Conducted	Occurrence On-site	Focused Survey Conducted
Eumops perotis californicus	(California) Western mastiff bat	Fed: None State: None DFG: CSC WBWG: High priority CNDDB Ranked	NC	widespread forager; roosts in cliffs and buildings	Potential	No	Potential	No
Lepus californicus bennettii	San Diego black-tailed jackrabbit	Fed: None State: None DFG: CSC CNDDB Ranked	NC	coastal sage scrub, grassland and chaparral	Potential	No	Unlikely	No suitable habitat
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	Fed: None State: None DFG: CSC CNDDB Ranked	NC	coastal sage scrub, grassland and chaparral	Potential	No	Unlikely	No suitable habitat
Perognathus longimembris pacificus	Pacific pocket mouse	Fed: FE State: ESA: CESA:None DFG: CSC CNDDB Ranked	CC	Ranges from the vicinity of Marina del Rey in Los Angeles south along the immediate coast to the Mexican border. All definite historical localities are within 4km from the ocean and at elevations of 600 feet or less. Currently known from four locations, including the Dana Point Headlands and three locations on Camp Pendleton. This pocket mouse frequents sandy soils with sparse vegetation cover. All potential pocket mouse habitat in the Coastal/Central	Unlikely	No suitable habitat.	Unlikely	No suitable habitat

Table 4.4-2 [continued]
Special Status Wildlife Species Known to Occur in the Project Vicinity

Scientific Name	Common Name	Status	NCCP	Habitat	IRWD Study Area		Planning Areas 13 & 17	
					Occurrence On-site	Focused Survey Conducted	Occurrence On-site	Focused Survey Conducted
Perognathus longimembris pacificus *[continued]*	Pacific pocket mouse			NCCP/HCP Subregion has been mapped and none occurs within the project site (County of Orange, Environmental Management Agency (1995a).				
Perognathus longimembris brevinasus	Los Angeles pocket mouse	Fed: None State: None DFG: CSC CNDDB Ranked	NC	inhabits open ground with fine sandy soils fine, sandy soils, may be restricted to lower elevation grassland and coastal sage scrub	Potential	No	Unlikely	No suitable habitat
Neotoma lepida intermedia	San Diego desert woodrat	Fed: None State: None DFG: CSC CNDDB Ranked	C	cactus patches and rock outcroppings in coastal sage scrub	Potential	No	Potential	No
Onychomys torridus ramona	Ramona grasshopper mouse	Fed: None State: None DFG: CSC CNDDB Ranked	NC	annual grassland and coastal sage scrub	Potential	No	Unlikely	No suitable habitat
Taxidea taxus	American badger	Fed: None State: None DFG: CSC CNDDB Ranked	NC	widespread in natural habitats	Potential	No	Unlikely	No suitable habitat

Definitions – (see Department of Fish and Game web page http://www.dfg.ca.gov/whdab/html/cnddb.html for details)
ESA = Federal Endangered Species Act
FE = federal endangered
FT = federal threatened
FPE = federally proposed for listing as endangered
FPT = federally proposed for listing as threatened
FC = federal candidate species
CESA = California Endangered Species Act
SE = state endangered
ST = state threatened
SCE = state candidate for listing as endangered
SCT = state candidate for listing as threatened
DFG = Department of Fish and Game
CSC = California species of special concern
FP = fully protected species
WL = Watch list
CNDDB ranked = species listed under the states CNDDB program
FWS = Fish and Wildlife Service
BCC = Birds of Conservation Concern
Watch List = list of sensitive species
WBWG = The Western Bat Working Group
High Priority = list of species at high risk
Local concern = species that is in decline in local area
NCCP = County of Orange Central and Coastal Subregion
C = covered species
CC = conditionally covered species
NC = not covered species
- - = information not provided

Source: Harmsworth Associates, *Biological Report for the Lake Forest IRWD Site*, September 2008; and PCR Services Corporation, *Results of Biological Constraints Analysis Conducted for the 19.7-Acre Proposed City Hall and Park Project Site*, May 27, 2008.

IRWD Study Area

As indicated in Table 4.4-2, 32 of the 47 special status wildlife species known to occur in the project vicinity were identified as having potential to occur and four (4) were observed on the IRWD study area. The following two wildlife species are Federal/State listed: American peregrine falcon (*Falco peregrinus anatum*) is a State endangered species; and Coastal California Gnatcatcher (*Polioptila californica californica*) is a Federally threatened species. Eleven (11) of the 47 special status wildlife species known to occur in the project vicinity were identified as having no (i.e., unlikely) potential to occur on the IRWD study area.

Focused surveys were conducted for the following two (2) special status wildlife species having potential to occur on the IRWD study area:

- Coastal California gnatcatcher - *Polioptila californica californica*; and
- Coastal cactus wren - *Campylorhynchus brunneicapillus*.

No coastal cactus wrens were detected on the IRWD survey area during the 2008 surveys. Therefore, project implementation would result in a less than significant impact regarding this special status wildlife species and no further analysis is required. It is noted, coastal cactus wren is an NCCP/HCP-listed "Identified (Target) Species," which is fully covered by the City's participation in the NCCP/HCP; refer to the *Natural Community Conservation Plan & Habitat Conservation Plan* Section below.

Two pairs of California gnatcatcher and an additional unpaired juvenile gnatcatcher were detected onsite during the 2008 surveys. One pair occurred in the coastal sage scrub on the western edge of the IRWD study area, a second pair occurred in the south near the water tanks, and unpaired juvenile gnatcatcher occurred in the narrow strip of coastal sage scrub along the IRWD study area's eastern boarder (refer to Figure 3 of the Harmsworth Associates September 2008 Report). Coastal California gnatcatcher is an NCCP/HCP-listed "Identified (Target) Species," which is fully covered by the City's participation in the NCCP/HCP; refer to the *Natural Community Conservation Plan & Habitat Conservation Plan* Section below.

The following three (3) special status wildlife species were also observed on the IRWD survey area during the initial site assessment, although focused surveys were not conducted: Cooper's hawk (*Accipiter cooperi*); Merlin (*Falco columbarius*); and California horned lark (*Eremophila alpestris actia*). Neither of these species is an NCCP/HCP-listed "Identified Species."

A focused survey of the IRWD study area has not been conducted for the American peregrine falcon. However, given it would only utilize the IRWD study area by passing through and would not nest on-site (due to the lack of suitable nesting habitat), mitigation would not likely be required by resource agencies. Therefore, project implementation would result in a less than significant impact regarding this special status wildlife species and no further analysis is required. Additionally, it is an NCCP/HCP-listed "Identified Species," which is fully covered by the City's participation in the NCCP/HCP; refer to the *Natural Community Conservation Plan & Habitat Conservation Plan* Section below.

Focused surveys have not been conducted for the following 30 special status wildlife species identified as having potential to occur on the IRWD study area:

- Coast (San Diego) horned lizard - *Phrynosoma coronatum (blainvillei)* (C);
- Coronado skink - *Eumeces skiltonianus interparietalis* (C);
- Coastal western whiptail - *Cnemidophorus tigris stejnegeri* (C);
- Orange-throated whiptail - *Cnemidophorus hyperytha* (C);
- Silvery legless lizard - *Anniella pulchra pulchra*;
- Coastal rosy boa - *Charina trivirgata roseofusca* (C);
- Coast patch-nosed snake - *Salvadora hexalepis virgultea*;
- Northern red-diamond rattlesnake - *Crotalus ruber ruber* (C);
- Northern harrier - *Circus cyaneus* (C);
- White-tailed kite - *Elanus leucurus*;
- Sharp-shinned hawk - *Accipiter striatus* (C);
- Ferruginous hawk - *Buteo regalis*;
- Golden eagle - *Aquila chrysaetos* (CC);
- Burrowing owl - *Athene cunicularia*;
- Short-eared owl - *Asio flammeus*;
- Long-eared owl - *Asio otus*;
- Rufous hummingbird - *Selasphorus rufus*;
- Loggerhead shrike - *Lanius ludovicianus*;
- Southern California rufous-crowned sparrow - *Aimophila ruficeps canescens* (C);
- Lawrence's goldfinch - *Carduelis lawrencei*;
- California leaf-nosed bat - *Macrotus californicus*;
- Pallid bat - *Antrozous pallidus*;
- Yuma myotis - *Myotis yumanensis*;
- California (Western) mastiff bat - *Eumops perotis californicus*;
- San Diego black-tailed jackrabbit - *Lepus californicus bennettii*;
- Northwestern San Diego pocket mouse - *Chaetodipus fallax fallax*;
- Los Angeles pocket mouse - *Perognathus longimembris brevinasus*;
- San Diego desert woodrat - *Neotoma lepida intermedia* (C);
- Ramona grasshopper mouse - *Onychomys torridus Ramona*; and
- American badger - *Taxidea taxus*.

Therefore, Mitigation Measure BIO-1 requires that the Applicant conduct focused surveys for these 30 special status wildlife species on the IRWD study area, prior to the issuance of a grading permit, in order to determine their presence or absence. Of the 30 species outlined above, 11 are NCCP/HCP "Identified Species;" refer to the *Natural Community Conservation Plan & Habitat Conservation Plan* Section below. As previously noted, Cooper's hawk, merlin, and California horned lark were observed on the IRWD survey area during the initial site assessment. Therefore, the presence of these three species has been confirmed and focused surveys are not warranted.

Conclusion

Focused surveys have been conducted for two (2) of the 32 special status wildlife species identified as having potential to occur on the IRWD study area: Coastal California gnatcatcher and Coastal cactus wren; refer to Table 4.4-2. The Coastal cactus wren was not observed on

the IRWD study area. Therefore, project implementation would result in less than significant impacts in this regard and no further analysis is required.

The Coastal California gnatcatcher, an NCCP/HCP-listed "Identified (Target) Species," was observed on the IRWD study area; therefore, compliance with Mitigation Measure BIO-2 would be required. Mitigation Measure BIO-2 requires compliance with the NCCP and its associated Implementing Agreement. Project-related impacts to the California gnatcatcher, which receives regulatory coverage under the NCCP would be considered mitigated to a less than significant level following compliance with Mitigation Measure BIO-2. The potential project impacts to this "Target" species would occur within a designated Impact Area that is outside of the NCCP Reserve. Therefore, the project would not require further mitigation beyond that required by the NCCP and its associated Implementing Agreement. With implementation of Mitigation Measure BIO-2 requiring compliance with the NCCP, impacts to coastal California gnatcatcher on the IRWD study area would be reduced to less than significant levels.

Additionally, Cooper's hawk, Merlin, and California horned lark (none an NCCP/HCP-listed "Identified Species") were observed on the IRWD study area; therefore, compliance with Mitigation Measure BIO-3 would be required. Mitigation Measure BIO-3 would require adherence to requirements of the FESA or CESA, if applicable. If the species is not protected under FESA or CESA, but is otherwise protected through another regulatory requirement, the Applicant would be required to provide suitable replacement habitat at a minimum ratio of 1:1. The Applicant may also be required to prepare a mitigation plan to demonstrate that appropriate long-term habitat management is provided.

Focused surveys have not been conducted for 30 special status wildlife species identified as having some potential to occur on the IRWD study area. Of these 30 species, the following 11 are NCCP/HCP "Identified":

- Coast (San Diego) horned lizard - *Phrynosoma coronatum (blainvillei)*;
- Coronado skink - *Eumeces skiltonianus interparietalis*;
- Coastal western whiptail - *Cnemidophorus tigris stejnegeri*;
- Orange-throated whiptail - *Cnemidophorus hyperytha* (Target);
- Coastal rosy boa - *Charina trivirgata roseofusca*;
- Northern red-diamond rattlesnake - *Crotalus ruber ruber*;
- Northern harrier - *Circus cyaneus*;
- Sharp-shinned hawk - *Accipiter striatus*;
- Golden eagle - *Aquila chrysaetos* (CC);
- Southern California rufous-crowned sparrow - *Aimophila ruficeps canescens*; and
- San Diego desert woodrat - *Neotoma lepida intermedia*.

If these special status wildlife species are observed during the focused surveys, then compliance with Mitigation Measure BIO-2 would be required. Mitigation Measure BIO-2 would require compliance with the NCCP and its associated Implementing Agreement. Project-related impacts to these species, which receives regulatory coverage under the NCCP would be considered mitigated to a less than significant level following compliance with Mitigation Measure BIO-2. The potential project impacts to these species would occur within a designated Impact Area that is outside of the NCCP Reserve. Therefore, the project would not require further mitigation beyond that required by the NCCP and its associated Implementing Agreement. With implementation of Mitigation Measure BIO-2 requiring compliance with the

NCCP, impacts to these species on the IRWD study area would be reduced to less than significant levels.

Focused surveys have not been conducted for the following 19 special status wildlife species identified as having some potential to occur on the IRWD study area, which are not NCCP Identified species:

- Silvery legless lizard - *Anniella pulchra pulchra*;
- Coast patch-nosed snake - *Salvadora hexalepis virgultea*;
- White-tailed kite - *Elanus leucurus*;
- Ferruginous hawk - *Buteo regalis*;
- Burrowing owl - *Athene cunicularia*;
- Short-eared owl - *Asio flammeus*;
- Long-eared owl - *Asio otus*;
- Rufous humming bird - *Selasphorus rufus*;
- Loggerhead shrike - *Lanius ludovicianus*;
- Lawrence's goldfinch - *Carduelis lawrencei*;
- California leaf-nosed bat - *Macrotus californicus*;
- Pallid bat - *Antrozous pallidus*;
- Yuma myotis - *Myotis yumanensis*;
- California (Western) mastiff bat - *Eumops perotis californicus*;
- San Diego black-tailed jackrabbit - *Lepus californicus bennettii*;
- Northwestern San Diego pocket mouse - *Chaetodipus fallax fallax*;
- Los Angeles pocket mouse - *Perognathus longimembris brevinasus*;
- Ramona grasshopper mouse - *Onychomys torridus Ramona*; and
- American badger - *Taxidea taxus*.

If these special status plant species are observed during the focused surveys, then compliance with Mitigation Measure BIO-3 would be required. Mitigation Measure BIO-3 would require adherence to requirements of the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA), if applicable. If the species is not protected under FESA or CESA, but is otherwise protected through another regulatory requirement, the Applicant would be required to provide suitable replacement habitat at a minimum ratio of 1:1. The Applicant may also be required to prepare a mitigation plan to demonstrate that appropriate long-term habitat management is provided. With implementation of Mitigation Measure BIO-3 requiring compliance with FESA/CESA, impacts to these species on the IRWD study area would be reduced to less than significant levels.

Overall, with implementation of Mitigation Measure BIO-1 (and potentially Mitigation Measures BIO-2 and BIO-3, as necessary), project development on the IRWD study area would not result in substantial adverse effects on any wildlife species identified as a candidate, sensitive, or special status species. This topic will not be further discussed in the EIR.

Planning Areas 13 and 17

As indicated in Table 4.4-2, 18 of the 47 special status wildlife species known to occur in the project vicinity were identified as having potential to occur and three (3) were observed on PAs 13/17. The following four wildlife species are Federal/State listed: American peregrine falcon (*Falco peregrinus anatum*) is a State endangered species; Coastal California Gnatcatcher

(*Polioptila californica californica*) is a Federally threatened species; Southwestern willow flycatcher (*Empidonas traillii extimus*) is a Federal and State endangered species; and Least Bell's vireo (*Vireo bellii pusillus*) is a Federal and State endangered species. Twenty-six (26) of the 47 special status wildlife species known to occur in the project vicinity were identified as having no (i.e., unlikely) potential to occur on PAs 13/17.

Focused surveys were conducted for the following three special status wildlife species having potential to occur on PAs 13/17:

- Coastal California gnatcatcher - *Polioptila californica californica* (C);
- Southwestern willow flycatcher - *Empidonas traillii extimus* (CC); and
- Least Bell's vireo - *Vireo bellii pusillus* (C).

One pair of coastal California gnatcatchers was observed on PAs 13/17 during the focused surveys. This pair occurred primarily within the central portion of PAs 13/17 but was also observed within the eastern and northern portions. The pair was first detected on June 4, 2008 and was observed on all of the following surveys. The pair was observed utilizing mixed scrub, mixed scrub/mule fat scrub, mule fat scrub, and buckwheat scrub habitats (refer to Figure 4 of the PCR September 2, 2008 Report). This map depicts a polygon that includes the locations of all observations of coastal California gnatcatchers within PAs 13/17. Coastal California gnatcatcher is an NCCP/HCP-listed "Identified (Target) Species," which is fully covered by the City's participation in the NCCP/HCP; refer to the *Natural Community Conservation Plan & Habitat Conservation Plan* Section below.

No Southwestern willow flycatchers were observed within PAs 13/17; however, a male willow flycatcher (*Empidonax traillii*), was observed during a previous survey. Because it was not heard during subsequent surveys, it is considered to be a migrant. Southwestern willow flycatcher is an NCCP/HCP-listed "Identified Species," which is fully covered by the City's participation in the NCCP/HCP; refer to the *Natural Community Conservation Plan & Habitat Conservation Plan* Section below.

No Least Bell's vireos were observed within PAs 13/17. Therefore, project implementation would result in a less than significant impact regarding this special status wildlife species and no further analysis is required. It is noted, Least Bell's vireo is an NCCP/HCP-listed "Identified Species," which is fully covered by the City's participation in the NCCP/HCP; refer to the Natural Community Conservation Plan & Habitat Conservation Plan Section below.

The following two (2) special status wildlife species were also observed on PAs 13/17 during the surveys/initial site assessment, although focused surveys were not conducted: Yellow warbler (*Dendroica petechia*); and Yellow-breasted chat (*Icteria virens*). Neither of these species is an NCCP/HCP-listed "Identified Species."

A focused survey of PAs 13/17 has not been conducted for the American peregrine falcon. However, given it would only utilize PAs 13/17 by passing through and would not nest on-site (due to the lack of suitable nesting habitat), mitigation would not likely be required by resource agencies. Therefore, project implementation would result in a less than significant impact regarding this special status wildlife species and no further analysis is required. Additionally, it is an NCCP/HCP-listed "Identified Species," which is fully covered by the City's participation in the NCCP/HCP.

Focused surveys have not been conducted for the following 16 special status wildlife species identified as having potential to occur on PAs 13/17:

- Coast (San Diego) horned lizard - *Phrynosoma coronatum (blainvillei)* (C);
- Orange-throated whiptail - *Cnemidophorus hyperytha* (T);
- Silvery legless lizard - *Anniella pulchra pulchra*;
- Coast patch-nosed snake - *Salvadora hexalepis virgultea*;
- Northern red-diamond rattlesnake - *Crotalus ruber ruber* (C);
- Coast range newt - *Taricha torosa torosa*;
- Two-striped garter snake - *Thamnophis hammondii*;
- Northern harrier - *Circus cyaneus* (C);
- White-tailed kite - *Elanus leucurus*;
- Golden eagle - *Aquila chrysaetos* (CC);
- Long-eared owl - *Asio otus*;
- Western red bat - *Lasiurus blossevilli*;
- Big free-tailed bat - *Nyctinomops macrotis*;
- Pallid bat - *Antrozous pallidus*;
- California (Western) mastiff bat - *Eumops perotis californicus*; and
- San Diego desert woodrat - *Neotoma lepida intermedia* (C).

Therefore, Mitigation Measure BIO-1 requires that the Applicant conduct focused surveys for these 16 special status wildlife species on PAs 13/17, prior to the issuance of a grading permit, in order to determine their presence or absence. Of the 16 species outlined above, six (6) are NCCP/HCP "Identified Species"; refer to the *Natural Community Conservation Plan & Habitat Conservation Plan* Section below. As previously noted, Yellow warbler and Yellow-breasted chat were observed on PAs 13/17 during site surveys. Therefore, the presence of these two species has been confirmed and focused surveys are not warranted.

Conclusion

Focused surveys have been conducted for three (3) of the 18 special status wildlife species identified as having potential to occur on PAs 13/17: Coastal California gnatcatcher; southwestern willow flycatcher; and Least Bell's vireo; refer to Table 4.4-2. The Least Bell's vireo was not observed on PAs 13/17. Therefore, project implementation would result in less than significant impacts in this regard and no further analysis is required.

The Coastal California gnatcatcher (an NCCP/HCP-listed "Identified (Target) Species") and southwestern willow flycatcher (an NCCP/HCP-listed "Identified (Conditionally Covered) Species") were observed on PAs 13/17; therefore, compliance with Mitigation Measure BIO-2 would be required. Mitigation Measure BIO-2 requires compliance with the NCCP and its associated Implementing Agreement. Project-related impacts to the California gnatcatcher and southwestern willow flycatcher, which receive regulatory coverage under the NCCP would be considered mitigated to a less than significant level following compliance with Mitigation Measure BIO-2. The potential project impacts to these "Target" and "Conditionally Covered" species would occur within a designated Impact Area that is outside of the NCCP Reserve. Therefore, the project would not require further mitigation beyond that required by the NCCP and its associated Implementing Agreement. With implementation of Mitigation Measure BIO-2 requiring compliance with the NCCP, impacts to coastal California gnatcatcher and southwestern willow flycatcher on PAs 13/17 would be reduced to less than significant levels.

Additionally, yellow warbler and yellow-breasted chat (none an NCCP/HCP-listed "Identified Species") were observed on PAs 13/17; therefore, compliance with Mitigation Measure BIO-3 would be required. Mitigation Measure BIO-3 would require adherence to requirements of the FESA or CESA, if applicable. If the species is not protected under FESA or CESA, but is otherwise protected through another regulatory requirement, the Applicant would be required to provide suitable replacement habitat at a minimum ratio of 1:1. The Applicant may also be required to prepare a mitigation plan to demonstrate that appropriate long-term habitat management is provided.

Focused surveys have not been conducted for 16 special status wildlife species identified as having some potential to occur on PAs 13/17. Of these 16 species, the following six (6) are NCCP/HCP "Identified":

- Coast (San Diego) horned lizard - *Phrynosoma coronatum (blainvillei)*;
- Orange-throated whiptail - *Cnemidophorus hyperytha* (Target);
- Northern red-diamond rattlesnake - *Crotalus ruber ruber*;
- Northern harrier - *Circus cyaneus*;
- Golden eagle - *Aquila chrysaetos* (Conditionally Covered); and
- San Diego desert woodrat - *Neotoma lepida intermedia*.

If these special status wildlife species are observed during the focused surveys, then compliance with Mitigation Measure BIO-2 would be required. Mitigation Measure BIO-2 would require compliance with the NCCP and its associated Implementing Agreement. Project-related impacts to these species, which receives regulatory coverage under the NCCP would be considered mitigated to a less than significant level following compliance with Mitigation Measure BIO-2. The potential project impacts to these species would occur within a designated Impact Area that is outside of the NCCP Reserve. Therefore, the project would not require further mitigation beyond that required by the NCCP and its associated Implementing Agreement. With implementation of Mitigation Measure BIO-2 requiring compliance with the NCCP, impacts to these species on PAs 13/17 would be reduced to less than significant levels.

Focused surveys have not been conducted for the following ten (10) special status wildlife species identified as having some potential to occur on PAs 13/17, which are not NCCP Identified species:

- Silvery legless lizard - *Anniella pulchra pulchra*;
- Coast patch-nosed snake - *Salvadora hexalepis virgultea*;
- Coast range newt - *Taricha torosa torosa*;
- Two-striped garter snake - *Thamnophis hammondii*;
- White-tailed kite - *Elanus leucurus*;
- Long-eared owl - *Asio otus*;
- Western red bat - *Lasiurus blossevilli*;
- Big free-tailed bat - *Nyctinomops macrotis*;
- Pallid bat - *Antrozous pallidus*; and
- California (Western) mastiff bat - *Eumops perotis californicus*.

If these special status plant species are observed during the focused surveys, then compliance with Mitigation Measure BIO-3 would be required. Mitigation Measure BIO-3 would require adherence to requirements of the Federal Endangered Species Act (FESA) or California

Endangered Species Act (CESA), if applicable. If the species is not protected under FESA or CESA, but is otherwise protected through another regulatory requirement, the Applicant would be required to provide suitable replacement habitat at a minimum ratio of 1:1. The Applicant may also be required to prepare a mitigation plan to demonstrate that appropriate long-term habitat management is provided. With implementation of Mitigation Measure BIO-3 requiring compliance with FESA/CESA, impacts to these species on PAs 13/17 would be reduced to less than significant levels.

Overall, with implementation of Mitigation Measure BIO-1 (and potentially Mitigation Measures BIO-2 and BIO-3, as necessary), project development on PAs 13/17 would not result in substantial adverse effects on any wildlife species identified as a candidate, sensitive, or special status species. This topic will not be further discussed in the EIR.

Mitigation Measures:

BIO-1 Prior to the issuance of a grading permit, the Applicant shall conduct biological field surveys of the project area for sensitive plant and wildlife species potentially occurring on the project site that were not surveyed in the *Biological Reports*. The IRWD study area shall be surveyed for the following special status plant and wildlife species:

Special Status Plants
- Catalina Mariposa Lily *(Calochortus catalinae)*;
- Western dichondra *(Dichondra occidentalis)*;
- Palmer's grapplinghook (*Harpagonella palmeri*);
- Mesa Horkelia (*Horkelia cuneata ssp. Puberula*);
- Robinson's peppergrass (*Lepidium virginicum var. Robinsonii*);
- Golden-flowered Pentachaeta (*Pentachaeta aurea*);
- Chaparral rein orchid (*Piperia cooperi*); and
- Rayless raywort (*Senecio aphanactis*).

Special Status Wildlife
- Coast (San Diego) horned lizard (*Phrynosoma coronatum (blainvillei)*);
- Coronado skink (*Eumeces skiltonianus interparietalis*);
- Coastal western whiptail (*Cnemidophorus tigris stejnegeri*);
- Orange-throated whiptail (*Cnemidophorus hyperytha*);
- Silvery legless lizard (*Anniella pulchra pulchra*);
- Coastal rosy boa (*Charina trivirgata roseofusca*);
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*);
- Northern red-diamond rattlesnake (*Crotalus ruber ruber*);
- Northern harrier (*Circus cyaneus*);
- White-tailed kite (*Elanus leucurus*);
- Sharp-shinned hawk (*Accipiter striatus*);
- Ferruginous hawk (*Buteo regalis*);
- Golden eagle (*Aquila chrysaetos*);
- Burrowing owl (*Athene cunicularia*);
- Short-eared owl (*Asio flammeus*);
- Long-eared owl (*Asio otus*);
- Rufous hummingbird (*Selasphorus rufus*);

- Loggerhead shrike (*Lanius ludovicianus*);
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*);
- Lawrence's goldfinch (*Carduelis lawrencei*);
- California leaf-nosed bat (*Macrotus californicus*);
- Pallid bat (*Antrozous pallidus*);
- Yuma myotis (*Myotis yumanensis*);
- California (Western) mastiff bat (*Eumops perotis californicus*);
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*);
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*);
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*);
- San Diego desert woodrat (*Neotoma lepida intermedia*);
- Ramona grasshopper mouse (*Onychomys torridus Ramona*); and
- American badger (*Taxidea taxus*).

Also, Planning Areas 13 and 17 shall be surveyed for the following special status wildlife species:

- Coast (San Diego) horned lizard (*Phrynosoma coronatum (blainvillei)*);
- Orange-throated whiptail (*Cnemidophorus hyperytha*);
- Silvery legless lizard (*Anniella pulchra pulchra*);
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*);
- Northern red-diamond rattlesnake (*Crotalus ruber rubber*);
- Coast range newt (*Taricha torosa torosa*);
- Two-striped garter snake (*Thamnophis hammondii*);
- Northern harrier *(Circus cyaneus*);
- White-tailed kite (*Elanus leucurus*);
- Golden eagle (*Aquila chrysaetos*);
- Long-eared owl (*Asio otus*);
- Western red bat (*Lasiurus blossevilli*);
- Big free-tailed bat (*Nyctinomops macrotis*);
- Pallid bat (*Antrozous pallidus*);
- California (Western) mastiff bat (*Eumops perotis californicus*); and
- San Diego desert woodrat (*Neotoma lepida intermedia*).

Surveys shall be conducted in accordance with current California Department of Fish and Game (CDFG) or United States Fish and Wildlife Services (USFWS) survey protocols for the target species by a qualified biologist or botanist, in order to determine their presence or absence at the project site. (Source: OSA PEIR Mitigation Measure MM 3.4-1)

BIO-2 Prior to the issuance of a grading permit, the Applicant shall conform and comply with the applicable requirements of the Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), including the payment of the appropriate in-lieu fee to mitigate for the loss of coastal sage scrub and any other NCCP/HCP covered habitat and species observed on the IRWD study area and Planning Areas 13 and 17, and during the additional surveys required under Mitigation Measure BIO-1.

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 coastal sage scrub habitat that is occupied by nesting gnatcatchers shall 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 United States Fish and Wildlife Services/California Department of Fish and Game (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 coastal sage scrub Identified Species that are not otherwise flushed and shall carry out the following measures, to the extent 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 coastal sage scrub 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 shall 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 coastal sage scrub. The landowner or relevant public agency/utility will advise USFWS/CDFG at least seven (7) calendar days (and preferably 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 shall 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 shall 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 shall 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 coastal sage scrub habitat to be avoided by construction equipment and personnel shall be marked with temporary fencing or other appropriate markers clearly visible to construction personnel. No construction access, parking, or storage of equipment or materials shall be permitted within such marked areas.

5. Coastal sage scrub 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. (Source: OSA PEIR Mitigation Measure MM 3.4-2)

BIO-3 Prior to the issuance of a grading permit, the Applicant shall, in an area where a species or habitat is not covered by the Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) has been identified, comply with the requirements of the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA), if applicable. If the species or habitat is not protected under FESA or CESA, but is otherwise protected through the Migratory Bird Treaty Act or other similar regulatory requirement, the Applicant shall provide suitable replacement habitat at a minimum of 1:1, and shall prepare and submit a mitigation plan for City approval that demonstrates that the replacement habitat is protected in perpetuity and that appropriate long-term habitat management is provided. The mitigation plan must be prepared in consultation with and receive the approval of the agency regulating the species or habitat. The mitigation plan shall provide for among other things, biological monitoring during grading activities, and fencing of any habitat area that would not be disturbed by construction. (Source: OSA PEIR Mitigation Measure MM 3.4-3)

4.4(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?

Less Than Significant Impact With Mitigation Incorporated.

IRWD Study Area

Figure 3 of the Harmsworth Associates September 2008 Report illustrates the vegetation types that are present on the IRWD study area. As illustrated on Figure 3, the IRWD study area consists primarily of developed and disturbed areas, including the existing/former IRWD facilities, roads, ornamental landscaping, and fallow agricultural land. Interspersed among the developed areas are re-vegetated slopes and ornamental landscaping, some of which include native vegetation (mapped as restored coastal sage scrub). Small areas of native coastal sage scrub, chaparral, and oak woodland habitats are located on-site. Table 4.4-3, *Habitat Type and Vegetation Communities*, outlines the habitat types that are present on the IRWD study area, in addition to the developed/disturbed areas. These habitat types and vegetation communities are discussed in detail in Section 4.1 of the Harmsworth Associates September 2008 Report. As indicated in Table 4.4-3, coastal sage scrub, oak woodlands, and chaparral are designated as "Covered Habitats" under the NCCP. Disturbance of these habitats was specifically addressed in the NCCP. Although, substantial wetland/riparian habitats and grasslands were included within the approved habitat Reserve system, they were not a specific focus of the NCCP's habitat conservation planning.

Table 4.4-3
Habitat Type and Vegetation Communities

Habitat Type/ Vegetation Community	NCCP	IRWD Study Area	Planning Areas 17 and 18	Total
Grassland (Ruderal)	NC	3.8	3.3	7.1
Coastal Sage Scrub (CSS)				
• Native	C	12.4		12.4
• Restored		8.6		8.6
• Buckwheat Scrub			1.4	1.4
• Mixed Scrub			4.7	4.7
• Mixed Scrub/Mulefat Scrub			0.2	0.2
Scrub Oak Chapparral	C	0.4	0.2	0.6
Riparian				
• Mulefat Scrub	NC	1.0	0.8	1.8
• Disturbed Mulefat Scrub			0.3	0.3
• Red Willow/Arroyo Willow Riparian Forest			2.5	2.5
Woodland Communities				
• Coast Live Oak Woodland	C	0.4	0.1	0.5
• Freemont's Cottonwood/Mixed Scrub			0.3	0.3
• Disturbed Freemont's Cottonwood			0.4	0.4
• Mexican Elderberry Woodland			0.2	0.2
Disturbed	NC	39.7		39.7
Developed	NC	14.9	0.8	15.7
Disturbed Mixed Scrub	NC		3.9	3.9
Ornamental	NC		0.6	0.6
Tamarisk	NC		0.1	0.1
Total		***81.2***	***19.7***	***100***[1]
1. Difference in total site acreage is due to number rounding.				

Sources:
- Harmsworth Associates, *Biological Report for the Lake Forest IRWD Site*, September 2008; and
- PCR Services Corporation, *Results of the Biological Constraints Analysis Conducted for the 19.7-Acre Proposed City Hall and Park Project Site*, May 27, 2008.

Planning Areas 13 and 17

Figure 3 of the PCR May 27, 2008 Report illustrates the vegetation types that are present on PAs 13/17. As illustrated on Figure 3, PAs 13/17 contain a variety of plant communities, as well as developed areas, disturbed areas, and ornamental communities. Table 4.4-3 outlines the habitat types that are present on PAs 13/17, in addition to the developed/disturbed areas.

Conclusion

Coastal sage scrub, oak woodlands, and chaparral are covered habitats under the NCCP. The NCCP program addresses the protection and management of coastal sage scrub habitat and coastal sage scrub-obligate species, and other covered habitats and species, and mitigates anticipated impacts to those habitats and species, on a programmatic, sub-regional level rather than on a project-by-project, single species basis. The project site is located within an NCCP in-lieu fee area for impacts to coastal sage scrub. Therefore, an in-lieu fee would be required to

mitigate the loss of coastal sage scrub as a result of project implementation. The in-lieu fee would be determined according to the number of acres of occupied habitat impacted by the project (Mitigation Measure BIO-2). Implementation of Mitigation Measure BIO-2 would reduce impacts to on-site coastal sage scrub, oak woodlands, and chaparral to a less than significant level. Project-related impacts to all habitats receiving regulatory coverage under the NCCP would be considered mitigated to a less than significant level following compliance with Mitigation Measure BIO-2, which requires compliance with the NCCP and its associated Implementing Agreement.

Additionally, the project could disturb other sensitive habitats/communities that are not covered under the NCCP/HCP, including mulefat scrub, red willow/arroyo willow riparian forest, Mexican elderberry, and Fremont's cottonwood/mixed scrub. Implementation of Mitigation Measure BIO-3 would require that the Applicant comply with the FESA or CESA, if applicable. If the habitat is not protected under FESA or CESA, but is otherwise protected through the Migratory Bird Treaty Act or other similar regulatory requirement, the Applicant would be required to provide suitable replacement habitat at a minimum ratio of 1:1, and prepare and submit a mitigation plan that demonstrates that the replacement habitat is protected in perpetuity and that appropriate long-term habitat management is provided.

Overall, with implementation of Mitigation Measures BIO-2 and BIO-3, the project would not 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 (CDFG) or U.S. Fish and Wildlife Service (USFWS). Refer to Response 4.4(c) for a discussion of impacts to jurisdictional riparian vegetation. This topic will not be further discussed in the EIR.

4.4(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?

Less Than Significant Impact With Mitigation Incorporated. The *Biological Reports* included a delineation of jurisdictional waters to determine the location and extent of any areas under the jurisdiction of the United States Army Corps of Engineers (ACOE) and/or the Santa Ana Regional Water Quality Control Board (RWQCB). The purpose of the study is to delineate jurisdictional waters of the U.S. (including wetlands) and waters of the State on PAs 13/17. No jurisdictional waters are present on the IRWD study area.

The ACOE regulates the "discharge of dredged or fill material" into waters of the U.S., which includes all waters currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce; waters subject to the ebb and flow of the tide; all interstate waters; all other waters, including intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce; or any other waters that are part of a tributary system to interstate waters or to navigable waters of the U.S., pursuant to provisions of Section 404 of the Clean Water Act (CWA).

The RWQCB regulates "discharging waste, or proposing to discharge waste, within any region that could affect waters of the State, pursuant to provisions of the Porter-Cologne Water Quality Control Act. Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the State."

The CDFG regulates activities which "will substantially divert, obstruct, or substantially change the natural flow or bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit." The CDFG takes jurisdiction to the top of bank of the stream, or the limit of the adjacent riparian vegetation when present.

As indicated in the *Investigation of Jurisdictional Wetlands and Waters of the U.S. Lake Forest City Hall Project Site* (Jurisdictional Investigation), PAs 13/17 were investigated to determine the presence or absence of ACOE, RWQCB, and/or CDFG jurisdiction. Serrano Creek is located to the east of the project site. The eastern portion of PA 13, adjoining Serrano Creek, would be designated and preserved as open space (Lot O). However, one drainage feature (Drainage A) and one associated tributary (Tributary A1) were identified in PA 13 (in the northeastern portion); refer to Exhibit 4.4-1, *Jurisdictional Features*. These on-site drainages are tributary to Serrano Creek to the east. No drainage features were identified on the remainder of the project site.

On-Site Drainage Features

Drainage A and Tributary A1 were delineated as jurisdictional "waters of the U.S." under Section 404 and 401 of the CWA, as well as State regulations, and are therefore regulated by all three agencies (ACOE, RWQCB, and CDFG). The on-site jurisdictional resources delineated within Drainage A and Tributary A1 total approximately 1,015 linear feet of streambed; refer to Table 4.4-4, *Jurisdictional Drainage Systems and Associated Wetlands*.

Table 4.4-4
Jurisdictional Drainage Systems and Associated Wetlands

Name	Length (feet)	Average Width (feet)			Area (acres)[1]			Nature
		ACOE/RWQCB	Wetlands	CDFG	ACOE/RWQCB	Wetlands	CDFG	
A	811	3-5	4-20	25-75	0.077	0.206	1.859	Perennial
A1	204	2-18	-	2-18	0.005	-	0.050	Ephemeral
TOTALS	1,015	-	-	-	0.082	0.206	1.909	-

Notes:
1. ACOE/RWQCB "waters of the U.S."/"waters of the State" acreages are included within the acreages for Wetlands and are not additive. ACOE/RWQCB "waters of the U.S."/"waters of the State" and Wetlands are included within the acreages of CDFG and the areas are not additive.

Source: PCR services Corporation, *Investigation of Jurisdictional Wetlands and Waters of the U.S. Lake Forest City Hall Project Site*, May 2008.

Source: PCR Services Corporation, 2008.

NOT TO SCALE

RBF CONSULTING

04/11 • JN 10-107199

SERRANO SUMMIT AREA PLAN 2009-01 AND
TENTATIVE TRACT MAP NO. 17331
INITIAL STUDY / ENVIRONMENTAL CHECKLIST

Jurisdictional Features

Exhibit 4.4-1

Drainage A (Perrenial, Wetlands)

Drainage A consists of a north/south flowing perennial drainage. The drainage is a small, well defined feature, confined within a small, topographically distinct riparian corridor located along the floor of a small valley. Flows originate from a distinct groundwater spring or discharge at the drainage's northern extent. These perennial flows are likely supported by natural groundwater and augmented by the irrigation associated with surrounding development. Additionally, the system hydrology is further supplemented from seasonal surface runoff, including sheet flow from the surrounding valley, and stormwater runoff from Indian Ocean Drive collected in the on-site concrete V-ditch. Drainage A is approximately 818 linear feet in length on-site, and exits the study area via a culvert under the Serrano Creek Trail. Drainage A subsequently flows off-site into Serrano Creek to the southeast.

Tributary A1 (Ephemeral)

Tributary A1 is a small confined, ephemeral feature that carries stormwater runoff down the steep northern slope into Drainage A. Tributary A1 is a generally well defined erosional feature with a channel that ranges from one to 20 feet wide, with one- to two-foot high vertical earthen banks. Tributary A1 is approximately 204 linear feet in length on-site and flows into Drainage A near its northern extent.

Jurisdictional Waters of the U.S.

Army Corps of Engineers/Regional Water Quality Control Board

Drainage A encompasses 0.077 acre of ACOE/RWQCB jurisdictional waters of the U.S./waters of the State. Drainage A also contains 0.206 acre of ACOE/RWQCB jurisdictional wetlands. It is noted that the area delineated as jurisdictional wetlands includes both the delineated jurisdictional waters of the U.S./waters of the State (0.077 acre) and bordering vegetated wetlands (0.129 acre), for a total of 0.206 acre of ACOE/RWQCB jurisdictional area within Drainage A. Tributary A1 was mapped to contain 0.005 acre of ACOE/RWQCB jurisdictional waters of the U.S./waters of the State. No wetlands are present within Tributary A1.

Drainage A and Tributary A1 are located in Planning Area 13 (which involves a Civic Center (under the proposed project) or residential uses (under the project alternative). Therefore, development of this portion of the project site would require the disturbance of both Drainage A and Tributary A1, which total 0.082 acre of ACOE/RWQCB jurisdictional waters of the U.S./waters of the State, and 0.206 acres of ACOE/RWQCB jurisdictional wetlands. Thus, the Applicant would be required to obtain the appropriate permits from the ACOE and RWQCB prior to approval of grading plans (Mitigation Measure BIO-4). With implementation of Mitigation Measure BIO-4, impacts in this regard would be reduced to less than significant levels.

California Department of Fish and Game

Drainage A encompasses 1.859 acre of CDFG jurisdictional streambed and associated riparian habitat. Tributary A1 contains 0.050 acre of CDFG jurisdictional streambed and associated riparian habitat.

Drainage A and Tributary A1 are located in Planning Area 13 (which is proposed for development, as described above). Therefore, development of this portion of the project site would require the disturbance of both Drainage A and Tributary A1, which total 1.909 acres of CDFG jurisdictional streambed and associated riparian habitat. Thus, the Applicant would be required to obtain the appropriate permits from the CDFG prior to approval of grading plans (Mitigation Measure BIO-4). With implementation of Mitigation Measure BIO-4, impacts in this regard would be reduced to less than significant levels.

Conclusion

Upon compliance with the recommended Mitigation Measure BIO-4, the project would not result in a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means. This topic will not be further analyzed in the EIR.

Mitigation Measures:

BIO-4 Prior to the approval of grading plans, the Applicant would be required to prepare an application for fill of waters subject to the Army Corps of Engineers (ACOE) jurisdiction. If appropriate, a streambed alteration agreement shall be obtained from California Department of Fish and Game (CDFG). The Applicant shall submit an application to the Regional Water Quality Control Board (RWQCB) for a waste discharge requirement or waiver of waste discharge requirement. The Applicant shall also consider any other permits from the ACOE, CDFG, RWQCB, or any other applicable regulatory agency that may be necessary. (Source: OSA PEIR Mitigation Measure MM 3.4-4)

4.4(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?

Less Than Significant Impact With Mitigation Incorporated. Project implementation could interfere with the movement of a native resident or migratory species or disturb an established wildlife corridor. The following is a discussion of potential impacts to wildlife corridors and migratory birds.

Wildlife Corridors

Wildlife corridors are areas which animals can use to move from one patch of suitable habitat to another. A wildlife corridor establishes connectivity for animals to move, live, reproduce, and respond to functional ecological processes during the course of a year to several years. Wildlife crossings are generally small and narrow allowing wildlife to pass through an obstacle or barrier such as a roadway to reach another patch of habitat. Wildlife crossings are manmade and include culverts, drainage pipes, underpasses, tunnels, and crossings created specifically for wildlife movement over or under highways. Both wildlife crossings and wildlife corridors function to prevent habitat fragmentation that would result in the loss of species that require large contiguous expanses of unbroken habitat and/or that occur in low densities. Linkages are areas that provide for long term movement or interaction of wildlife to maintain natural evolutionary and ecological patterns.

According to the *Biological Reports*, no wildlife corridors, crossings, or linkages exist on the project site. Although portions of the Serrano Creek corridor are located within the project site along the eastern boundary, this area is proposed as open space and would be preserved upon project implementation. Therefore, a less than significant impact would occur, as the project would not 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. This topic will not be further analyzed in the EIR.

Migratory Birds

According to the *Biological Reports*, the project site has the potential to support migratory bird species, including both raptor and songbird species. Disturbing or destroying active nests is a violation of the Federal Migratory Bird Treaty Act. Nesting activity typically occurs from mid-February to mid-August. The removal of vegetation during the breeding season is considered a potentially significant impact. Therefore, the project would be required to comply with Mitigation Measure BIO-5.

Mitigation Measure BIO-5 would be accomplished in one of two ways. First, efforts would be made to schedule all vegetation removal activities outside the nesting season (typically February 15 to August 15) to avoid potential impacts to nesting birds. This would ensure that no active nests would be disturbed and that habitat removal could proceed rapidly. Secondly, if initial vegetation removal occurs during the nesting season, all suitable habitat would be thoroughly surveyed for the presence of nesting birds by a qualified biologist before commencement of clearing. If any active nests are detected, a buffer of at least 100 feet (300 feet for raptors) would be delineated, flagged, and avoided until the nesting cycle is complete as determined by the biological monitor to minimize impacts. Therefore, with implementation of Mitigation Measure BIO-5, impacts to migratory birds would be reduced to less than significant levels. This topic will not be further analyzed in the EIR.

Mitigation Measures:

BIO-5 To the extent feasible, all vegetation removal activities shall be scheduled outside the nesting season (typically February 15 to August 15) to avoid potential impacts to nesting birds. However, if initial vegetation removal occurs during the nesting season, all suitable habitat shall be thoroughly surveyed for the presence of nesting birds by a qualified biologist prior to commencement of clearing. If any active nests are detected, a buffer of at least 100 feet (300 feet for raptors) shall be delineated, flagged, and avoided until the nesting cycle is complete as determined by the biological monitor to minimize impacts. (Source: OSA PEIR Mitigation Measure MM 3.4.2)

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

Less Than Significant Impact. The City (under Chapter 6.20 of the Municipal Code) regulates the maintenance of eucalyptus trees more than eight feet tall or with a trunk diameter of two inches or more measured at least three feet above ground level. The maintenance of eucalyptus trees is regulated to control the infestation by a beetle (eucalyptus longhorn borer).

During the period from April 1 through October 31 (the restricted period) of each year, a eucalyptus cutting permit must be obtained from the City to prune, remove, or transport a eucalyptus or its logs, branches, or trunk. During this restricted period, an application for a eucalyptus tree cutting or removal permit must include the number and location of the eucalyptus tree(s) to be cut, pruned, moved, or removed. The application must include the health, safety, or emergency reasons for the pruning, moving, or removal during the restricted period. From November 1 through March 31, no permit is required for the pruning, cutting, removal, or transportation of eucalyptus trees. The project may require the pruning, cutting, removal, or transportation of eucalyptus trees. However, with adherence to Chapter 6.20 of the Municipal Code, the project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. This topic will not be further analyzed in the EIR.

4.4(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?

Less Than Significant Impact With Mitigation Incorporated. The *Biological Reports* identify the project site to be located within the NCCP/HCP. The project site lies within the Central Subarea of the NCCP/HCP. Also, the project site is within an NCCP Impact Area. The purpose of an NCCP/HCP is to protect natural communities and species, while allowing a reasonable amount of economic development. As stated in Response 4.4(a), coastal sage scrub and the California gnatcatcher occur on the project site, among other NCCP Identified species. As the project would result in disturbance to these species and their habitat, the NCCP/HCP would require an in-lieu fee payment (Mitigation Measure BIO-2). Thus, following compliance with the conditions of the NCCP and Implementation Agreement (Mitigation Measure BIO-2), all direct, indirect, and cumulative impacts to the covered habitats and Identified Species resulting from development within designated Impact Areas, the project would be considered fully mitigated. Therefore, with implementation of Mitigation Measure BIO-2, the project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. This topic will not be further analyzed in the EIR.

4.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5?				✓
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?		✓		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		
d. Disturb any human remains, including those interred outside of formal cemeteries?			✓	

Impact Analysis

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

No Impact. A records search conducted as part of the OSA PEIR determined that there are no historical resources located within a half-mile radius of the project area or within the project site.[4] Therefore, development within the project site would not impact historic resources and this topic will not be further analyzed in the EIR.

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

Less Than Significant Impact With Mitigation Incorporated. Figure RR-6 of the General Plan indicates that the project site is located within an area of potential archaeological resources. Additionally, the OSA PEIR identified 12 archaeological sites within the OSA. The project site either includes or is located within a half-mile radius of an archaeological site. Also, the City's General Plan identifies most of the City as sensitive (i.e., having the potential to yield) to archaeological resources. Any archaeological resources discovered at the project site could potentially be considered a unique archaeological resource. The OSA PEIR identifies mitigation measures that would require assessment, avoidance or data recovery, and monitoring of construction activities by a qualified archaeologist (Mitigation Measures CUL-1 through CUL-4). As concluded in the OSA PEIR, with implementation of CUL-1 through CUL-4, development of the project site would not result in a substantial adverse change in the significance of an archaeological resource.[5] Impacts would be reduced to a less than significant level and this topic will not be further analyzed in the EIR.

[4] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.5-2.

[5] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.5-12.

Mitigation Measures:

CUL-1 Prior to the 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 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 examination 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 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. (Source: OSA PEIR Mitigation Measure MM 3.5-1)

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

CUL-3 Artifacts recovered shall be prepared, identified, and cataloged 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. (Source: OSA PEIR Mitigation Measure MM 3.5-3)

CUL-4 The qualified archaeologist retained shall prepare a final report to be filed with the site developer(s) and the City of Lake Forest. The qualified archaeologist retained 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. (Source: OSA PEIR Mitigation Measure MM 3.5-4)

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

Less Than Significant Impact With Mitigation Incorporated. Figure RR-6 of the General Plan indicates that the project site is located within an area of potential paleontological resources. Additionally, the OSA PEIR identified known paleontological resources underlying the OSA, which includes the project site. Construction activities could potentially affect these resources. The OSA PEIR identifies mitigation measures that would reduce potential impacts to less than significant by minimizing the potential for damage and ensuring that any resources would be appropriately evaluated by a qualified paleontologist (Mitigation Measures CUL-5 through CUL-8).[6] With implementation of Mitigation Measures CUL-4 through CUL-8, impacts pertaining to the direct or indirect destruction of a unique paleontological resource or site (or unique geologic feature) would be reduced to less than significant levels. This topic will not be further analyzed in the EIR.

Mitigation Measures:

CUL-5 Prior to issuance of a grading permit, a qualified paleontologist shall be retained by the site developer(s) to provide professional paleontological services. 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. (Source: OSA PEIR Mitigation Measure MM 3.5-5)

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

CUL-7 Fossils recovered shall be prepared, identified, and cataloged before donation to the accredited repository designated by the City of Lake Forest. (Source: OSA PEIR Mitigation Measure MM 3.5-7)

CUL-8 The qualified paleontologist retained 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. (Source: OSA PEIR Mitigation Measure MM 3.5-8)

[6] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.5-12.

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

Less Than Significant Impact. No known human remains exist on-site, and due to the past disturbance of the project site, it is not anticipated that human remains exist within the project area. In the event human remains are encountered during earth removal or disturbance activities, all activities would cease immediately and a qualified archaeologist and Native American monitor would be immediately contacted. The Coroner would be contacted pursuant to Sections 5097.98 and 5097.99 of the Public Resources Code relative to Native American remains. Should the Coroner determine the human remains to be Native American, the Native American Heritage Commission would be contacted pursuant to Public Resources Code Section 5097.98. With adherence to the Public Resources Code, a less than significant impact would occur and this topic will not be further analyzed in the EIR.

4.6 GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				✓
2) Strong seismic ground shaking?		✓		
3) Seismic-related ground failure, including liquefaction?		✓		
4) Landslides?		✓		
b. Result in substantial soil erosion or the loss of topsoil?		✓		
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		✓		
d. Be located on expansive soil, as defined in Table 18-1-B of the California Building Code (2004), creating substantial risks to life or property?		✓		
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?				✓

The following analysis is based on the *Geotechnical Exploration Report* (GER), prepared by Leighton and Associates, Inc., dated January 11, 2010; refer to Appendix C, *Geotechnical Exploration Report*.

Impact Analysis

4.6(a)(1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving 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 Impact. The project site is not located within an Alquist-Priolo Special Studies Zone and no active faults are known to occur within the vicinity of the project site. The closest known regional fault to the project site that could produce significant ground shaking is the San Joaquin Hills Blind Thrust, located approximately 4.6 kilometers (km) from the project site. Therefore, project implementation would not expose people or structures to substantial adverse effects involving fault rupture. No impact would occur and this topic will not be further analyzed in the EIR.

4.6(a)(2) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Less Than Significant Impact With Mitigation Incorporated. The City is located within a seismically active region of southern California. The principal seismic hazard that could affect the project site is ground shaking resulting from an earthquake occurring along any one of several major active faults in the region. The known regional faults that could produce the most significant ground shaking at the project site include the San Joaquin Hills Blind Thrust, Elsinore (Glen Ivy), Newport-Inglewood (Offshore), Chino-Central Avenue (Elsinore), and Whittier faults, located approximately 4.6, 18.9, 19.9, 21.2, and 21.7 km from the site, respectively. The San Andreas Fault System, which is the largest active fault in California, is approximately 68 km northeast of the project site.

The intensity of ground shaking at a given location depends primarily upon the earthquake magnitude, the distance from the source, and the site response characteristics. The GER estimated the site's peak horizontal ground accelerations (PHGA) using probabilistic seismic hazard analysis. The results of the analyses suggest a PHGA of approximately 0.37g at the site for a hazard level of 10 percent probability of exceedance in 50 years (recurrence interval of 475 years) with a moment magnitude (M_W) of 7.0 and approximately 0.60g for two percent probability of exceedance in 50 years (recurrence interval of 2,475 years) with a moment magnitude (M_W) of 7.0. The latter hazard level corresponds to the Maximum Considered Earthquake (MCE) event.

According to the GER, no active faults are known to underlie the project site. However, based on borings conducted by Leighton and Associates, traces of inactive faults may be encountered during grading. Therefore, implementation of Mitigation Measure GEO-1 would require the project to adhere to the GER recommendations (Chapter 4.0, General Recommendations), which include the geologic mapping of the bedrock during the excavation of the site to further evaluate the subsurface conditions and confirm these findings. GER recommendations also include seismic design parameters for on-site buildings as well as proposed mechanically stabilized earth (MSE) walls and segmental retaining walls.

With implementation of Mitigation Measure GEO-1, project implementation would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. This topic will not be further analyzed in the EIR.

Mitigation Measures:

GEO-1 Prior to approval of grading plans, the project shall adhere to geotechnical recommendations outlined in Chapter 4.0, General Recommendations, of the *Geotechnical Exploration Report*, prepared by Leighton and Associates, Inc., dated January 11, 2010. Recommendations shall be noted on project grading plans and building specifications for the proposed Tentative Tract Map and any future projects proposed within the Area Plan. Grading plans and building specifications shall be reviewed and approved by the Building Official. (Source: OSA PEIR, Legal Requirements for Geology, Soils and Mineral Resources)

4.6(a)(3) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Less Than Significant Impact With Mitigation Incorporated. Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained granular soils behave similarly to a fluid when subjected to high-intensity ground shaking. Liquefaction occurs when three general conditions exist: 1) shallow groundwater; 2) low density, fine, clean sandy soils; and 3) high-intensity ground motion. Effects of liquefaction on level ground can include sand boils, settlement, and bearing capacity failures below structural foundations.

According to the GER, the project site is not within a liquefaction hazard zone. Due to shallow bedrock conditions and relatively deep groundwater levels, liquefaction is not expected to be a significant consideration for the project. However, in one boring conducted by Leighton and Associates, Inc., perched groundwater was encountered within the proposed detention basin area located in the southeastern portion of the project site. Based on the boring, young alluvial soils consisting of very loose to medium dense silty sand were encountered which, when saturated, have the potential to liquefy and settle under the effects of dynamic shaking, such as during a strong-motion earthquake. Liquefaction-induced settlement was calculated in the GER, and is considered relatively minor.

Implementation of Mitigation Measure GEO-1 would require the project to adhere to the GER recommendations, which include proper remedial grading and excavation at specified areas within the project site (which include areas potentially sensitive to liquefaction). Implementation of GEO-1 would reduce potential liquefaction impacts at the project site to less than significant levels.

Lurching is the relative displacement of adjacent land surfaces during an earthquake. As the seismic motion encounters a cliff or bluff, a stream bank, or a fill slope at nearly right angles it may cause displacement of the material in the unsupported direction. Lurching may also be caused by liquefaction of a zone beneath the otherwise intact surface. Visible evidence of lurching includes ground cracking and fissuring generally in a relatively parallel fashion to a stream bank or slope face. Ground cracking caused by lurching is not related to the fault rupture. Ground lurching may occur on the slopes within the borders of the project site, depending on the direction of seismic waves.

Implementation of Mitigation Measure GEO-1 would require the project to adhere to the GER recommendations, which include proper remedial grading and excavation at specified areas within the project site (which include areas sensitive to lurching). Also, GER recommendations include seismic design parameters for proposed MSE walls and segmental retaining walls. Implementation of GEO-1 would reduce potential lurching impacts at the project site to less than significant levels.

Upon compliance with the recommended Mitigation Measure GEO-1, the project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. This topic will not be further analyzed in the EIR.

4.6(a)(4) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Less Than Significant Impact With Mitigation Incorporated. Seismically-induced landslides and other slope failures are common occurrences during or soon after earthquakes. No landslides are known to be located at the project site or were observed during current and previous field explorations conducted as part of the GER. However, based on a previously prepared report reviewed during the preparation of the GER, a fill slope located adjacent to one of the buried reservoirs experienced surficial failure. This slope failure was attributed to heavy rains during March of 1993. The surficial failure was less than 3.0 feet thick and consisted generally of topsoil overlying engineered fill. Also, a clay bed was observed in one boring at the depth of 70 feet below existing ground surface along the project site's northwest property lines. Based on the GER, the western portion of the project site is located within an earthquake-induced landslide hazard zone. The potential for earthquake induced landslides impacting the project site is considered to be moderate.

Implementation of Mitigation Measure GEO-1 would require the project to adhere to the GER recommendations, which include proper remedial grading and excavation at specified areas within the project site (which includes areas sensitive to landslides). Also, GER recommendations include seismic design parameters for proposed MSE walls and segmental retaining walls. Implementation of GEO-1 would reduce potential landslide impacts at the project site to less than significant levels. Thus, the project would not result in exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. This topic will not be further analyzed in the EIR.

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

Less Than Significant Impact With Mitigation Incorporated. Soil erosion is defined as the detachment and movement of soil particles by the erosive forces of wind or water. Wind erosion is a common phenomenon occurring mostly in flat, bare areas; dry, sandy soils; or anywhere the soil is loose and finely granulated. Water erosion occurs due to the energy of water, as it falls toward the earth and flows over the surface. Surface water runoff carries away the detached soil, may detach additional soils, and ultimately deposit sediment elsewhere. Erosion can be controlled, however, cannot be completely avoided. Soil erosion can occur naturally or can be accelerated through human activity.

Clearing, excavation, and grading associated with proposed development could expose soils to substantial short-term soil erosion or loss of topsoil. The project is regulated under the National Pollution Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permits issued by the Santa Ana Regional Water Quality Control Boards (RWQCB) to Orange County (Order No. R8-2002-0010 and NPDES Permit No. CAS618030) and the SWRCB Order No. 99-08-DWQ (1999) for stormwater discharges and urban runoff.

Construction activities subject to the NPDES General Permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation that results in soil disturbances of at least one or more acres (Phase 1) of total land area. The SWRCB permits all regulated construction activities under Order No. 99-08-DWQ (1999). This Order requires that prior to beginning any construction activities, the permit applicant obtain coverage under the General Construction Permit by preparing and submitting a Notice of Intent (NOI) and appropriate fee to

the SWRCB. Additionally, coverage would not occur until an adequate Stormwater Pollution Prevention Plan (SWPPP) has been prepared. A separate NOI is required to be submitted to the SWRCB for each construction site. Dischargers are also required to inspect construction sites before and after storms to identify stormwater discharge from construction activity, and to identify and implement controls where necessary. Adherence to NPDES and SWPPP requirements would minimize wind and water erosion.

Additionally, the GER states that bedrock at the proposed cut slope face is anticipated to contain sediments which may be susceptible to severe erosion over time. Therefore, implementation of Mitigation Measure GEO-1 would require the project to adhere to the GER recommendations, which include maintaining surficial stability by inclusion of remedial measures, such as proper landscaping and/or erosion control matting. Following compliance with NPDES requirements, SWPPP development, and implementation of GEO-1, the project would not result in substantial soil erosion or the loss of topsoil. Also refer to Section 4.9(a), *Hydrology and Water Quality*. This topic will not be further analyzed in the EIR.

4.6(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?

Less Than Significant Impact With Mitigation Incorporated. According to the GER, portions of the project site may be located on unstable soil units and unstable slopes, and may be subject to lateral spreading. Refer to Responses 4.6(a)(3) and 4.6(a)(4) for a discussion on potential liquefaction and landslides, respectively.

The GER indicates that the lightly vegetated existing south facing natural slope located south of the existing IRWD administration building consists of approximately two to 15 feet of undocumented artificial fill, and/or colluvium, and/or alluvium consisting of loose silty sand and medium stiff sandy clay overlying bedrock. Based on a field exploration conducted by Leighton and Associates, Inc., the alluvium, colluvium, and undocumented artificial fill soils within the project area is surficially unstable. Laboratory test results indicate that on-site fill soils would have relatively low compressibility when subjected to the anticipated overburden pressure and slight collapse potential upon inundation. Therefore, implementation of Mitigation Measure GEO-1 would require the project to adhere to the GER recommendations, which include removing potentially unstable fill soils down to the bedrock prior to the replacement of fill.

Slope stability is influenced by a number of interrelated factors such as rock type, moisture retention characteristics, climate, rainfall intensity, erodibility and geologic structure. Manmade slopes must take these factors into account as the diversion of natural drainages, increased moisture contents, seismic loading and undercutting of slopes can disturb delicately balanced hillside environments. Shallow bedrock failures are rare on natural slopes such as those occurring on the project site as erosion usually removes highly weathered material down slope as creep or debris flows. Friable sand lenses can become unstable if not properly considered in the design of artificial cuts and fills.

The proposed site grading concept plan involves fill slopes with a maximum height of approximately 70 feet along the property lines and within the northern portion of the site. MSE walls or segmental retaining walls are proposed on the fill slopes along the northwestern and southeastern property lines and interior slopes. The GER includes the results of the slope

stability analyses for the proposed slopes. The stability analyses indicate the factor of safety of the proposed fill slopes along northwest property lines and interior fill slopes with MSE/segmental walls to be less than the minimum code required factor of safety of 1.5 for global stability. All other fill slopes analyzed within the project site were reported to be in compliance with code regulations. Therefore, implementation of Mitigation Measure GEO-1 would require the project to adhere to the GER recommendations, which include a buttress key for the fill slopes along the northwest property lines and stability fill keys at the toe of the south-facing fill slopes. Final slope stability analyses of interior fill slopes with MSE/Segmental walls will be performed and recommendations provided when configuration and design of said walls is completed. Implementation of GEO-1 would reduce potential slope stability impacts at the project site to less than significant levels.

Seismically-induced lateral spreading involves lateral movement of earth materials as a result of liquefaction. Lateral spreading differs from slope failure in that it involves lateral movement in areas of low topographic gradient to level ground due to lack of lateral support for liquefiable horizons in the soil. Lateral spreading is often manifested by near-vertical cracks with predominantly horizontal movements of the soil mass involved. The potential for lateral spreading to occur as a result of liquefaction at the proposed detention basin area is considered moderate. Implementation of Mitigation Measure GEO-1 would require the project to adhere to the GER recommendations, which include proper remedial grading and excavation at specified areas within the project site that are sensitive to lateral spreading. Implementation of GEO-1 would reduce potential lateral spreading impacts at the project site to less than significant levels.

Overall, upon compliance with the recommended Mitigation Measure GEO-1, the project would not result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. This topic will not be further analyzed in the EIR.

4.6(d) Be located on expansive soil, as defined in Table 18-1-B of the California Building Code (2010), creating substantial risks to life or property?

Less Than Significant Impact With Mitigation Incorporated. Expansive soils have a significant amount of clay particles that can give up water (shrink) or take on water (swell). The change in volume exerts stress on buildings and other loads placed on these soils. The occurrence of these soils is often associated with geologic units having marginal stability. Expansive soils can be widely dispersed, found in hillside areas as well as low-lying areas in alluvial basins.

According to the GER, laboratory testing of selected on-site soil samples indicates a low expansion potential. However, one boring encountered a clay seam at the depth of 70 feet below the existing grade which exhibited high expansion potential. Implementation of Mitigation Measure GEO-1 requires that the project adhere to the GER recommendations, which would include additional testing at or near finished grades across the site. With implementation of GEO-1, the project would not create substantial risks to life or property as a result of on-site expansive soils. This topic will not be further analyzed in the EIR.

4.6(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 existing land uses utilize the IRWD sewer system. The project proposes improvements/modifications to the existing on-site sewer systems. It would not be necessary to install septic tanks or other alternative types of wastewater disposal systems. No impact would occur with regard to on-site soils that are incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. This topic will not be further analyzed in the EIR.

4.7 GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	✓			
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	✓			

Greenhouse gases (GHGs) are gases in the atmosphere that absorb and emit radiation. The greenhouse effect traps heat in the troposphere through a three-fold process, summarized as follows: short wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long wave radiation; and GHGs in the upper atmosphere absorb this long wave radiation and emit this long wave radiation into space and toward the Earth. This "trapping" of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. The main GHGs in the Earth's atmosphere are water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), hydrofluorocarbons (HCFs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Direct GHG emissions include emissions from construction activities, area sources, and mobile (vehicle) sources. Typically, mobile sources make up the majority of direct emissions. Indirect GHG emissions are generated by incremental electricity consumption and waste generation. Electricity consumption is responsible for the majority of indirect emissions.

REGULATORY ENVIRONMENT

In June 2005, then Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050. California further solidified its dedication to reducing GHGs by setting a new Low Carbon Fuel Standard for transportation fuels sold within the State in 2007 with Executive Order S-1-07. Executive Order S-1-07 sets a declining standard for GHG emissions measured in CO_2 equivalent gram per unit of fuel energy sold in California.

In response to the transportation sector accounting for more than half of California's CO_2 emissions, Assembly Bill (AB) 1493 (AB 1493, Pavley) was enacted on July 22, 2002. AB 1493 required the California Air Resources Board (CARB) to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles whose primary use is noncommercial personal transportation in the State. Additionally, the California legislature enacted AB 32 (AB 32, Nuñez) in 2006 to further the goals of Executive Order S-3-05. AB 32 represents the first enforceable statewide program to limit GHG emissions from all major industries, with penalties for noncompliance.

The recommended approach for GHG analysis included in OPR's *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review* (June 19, 2008) release is to: (1) identify and quantify GHG emissions, (2) assess the significance of the impact on climate change, and (3) if significant, identify alternatives and/or mitigation measures to reduce the impact below a level of significance.[7] Neither the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or a particular methodology for performing an impact analysis; as with most environmental topics, significance criteria are left to the judgment and discretion of the lead agency.

Individual projects incrementally contribute toward the potential for global climate change on a cumulative basis in concert with all other past, present, and probable future projects. While individual projects are unlikely to measurably affect global climate change, each of these projects incrementally contributes toward the potential for global climate change on a cumulative basis, in concert with all other past, present, and probable future projects. The GHG analysis in the EIR will analyze whether the project and project alternative's emissions should be considered cumulatively significant. A significant global climate change impact would result if a project would:

- Hinder attainment of the State's goals of reducing GHG emissions to 1990 levels by 2020, as stated in the Global Warming Solutions Act of 2006. A project may be considered to help attainment of the State's goals by being consistent with an adopted statewide 2020 GHG emissions limit or the plans, programs, and regulations adopted to implement the Global Warming Solutions Act of 2006.

- Fail to achieve increased energy efficiency or reduce overall GHG emissions from an existing facility.

- Significantly increase the consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed.

Impact Analysis

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

Potentially Significant Impact. The project involves the development of residential uses combined with park and recreational areas, a new Civic Center, and existing IRWD facilities. The project alternative involves the development of residential uses combined with park and recreational areas, and existing IRWD facilities. Both the proposed project and project alternative could generate direct and indirect GHG emissions that may have a significant impact on the environment. Project implementation would generate GHG emissions from removal of vegetation, construction activities, gas usage, electricity consumption, water use, solid waste disposal, and motor vehicle use. GHG emissions associated with the proposed project and the project alternative could have a significant impact on the environment due to the amount of proposed development. Thus, project-related GHG emissions will be quantified and analyzed in more detail in the EIR to determine the significance of potential impacts.

[7] State of California Governor's Office of Planning and Research, *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review,* June 19, 2008.

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

Potentially Significant Impact. The City of Lake Forest does not have an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The Recreation and Resources Element of the General Plan also includes goals and policies addressing energy conservation. The General Plan states that energy requirements can be diminished through innovative architectural design, building construction, structural orientation and landscaping. The City promotes energy conservation by implementing State Title 24 energy performance requirements through City building codes. In addition, the relationship between project design and future energy requirements is considered when reviewing proposals for new development. The City also promotes utility company incentive programs to retrofit existing development with energy efficient lighting, air conditioning and heating systems to reduce energy consumption.

The City has established ECOnomic, which is a voluntary green home education program. The City, through ECOnomic, encourages homeowners and building professionals to incorporate green building design into construction projects. The proposed Area Plan includes a Green Builder Program (within the residential design guidelines), which include provisions for energy conservation through building design, reduction of non-renewable resources, and California-appropriate landscape practices. The Area Plan also contains sustainability development regulations, pertaining to structures, site development, and landscape sustainability.

As noted above, the City does not have an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, sustainable development policies, goals, and regulations that are established within the Recreation and Resources Element and the proposed Area Plan will be analyzed in more detail in the EIR to determine the significance of potential impacts.

4.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		✓		
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			✓	
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			✓	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				✓
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?		✓		
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				✓

Information presented in this Section pertaining to the existing hazardous materials conditions at the project site is based on the *Phase I Environmental Site Assessment* (*Phase I ESA*), prepared by Leighton and Associates, Inc., dated April 23, 2008; refer to Appendix D, *Phase I Environmental Site Assessment*.

Impact Analysis

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

Less Than Significant Impact. The IRWD currently operates a water treatment facility on-site. Upon project implementation, the IRWD water utility operations would remain on-site, with expansion of the facilities in the future. Hazardous materials anticipated to be used on-site at a future date would be similar to the existing hazardous materials maintained, used, and/or transported at the site. The IRWD would be required to comply with applicable Federal, State, and local laws regulating the generation, handling, transportation, and disposal of hazardous materials and waste. Specific requirements for implementation of these statutes are codified in

Title 40 of the Code of Federal Regulations (CFR). Additional regulations that apply to workplace safety and transportation of hazardous materials are contained in CFR Titles 29 and 49, respectively. The Hazardous Materials Management Act (HMMA) requires that any business that handles hazardous materials greater than specified threshold quantities (500 pounds of a solid material, 55 gallons of a liquid, or 200 cubic feet of a compressed gas stored at any one point in time) must prepare a "Business Plan." Specific requirements for implementation are codified primarily in Title 26 of the CCR and Chapter 6.95 of the California Health and Safety Code. Additional regulations that apply to workplace safety are contained in CCR Title 8. The haulers and users of hazardous materials are listed with the Orange County Fire Authority (OCFA) and are regulated and monitored under the auspices of the County of Orange.

Although, hazardous materials are not typically associated with residential or civic center uses, limited amounts of some hazardous materials could be used in the operation of the project. Minor cleaning and other maintenance products (used in the maintenance of buildings, pumps, pipes and equipment) would be utilized. Additionally, the limited application of pesticides and herbicides associated with landscaping around new developments would occur. The routine transport, use, and disposal of these materials would be subject to a wide range of laws and regulations, including those listed above, that are intended to minimize potential health risks associated with their use or the accidental release of such substances.

With implementation of the existing Federal, State, and local laws and regulations pertaining to hazardous materials, the project's impacts pertaining to the routine transport, use, or disposal of hazardous materials would be less than significant. This topic will not be further analyzed in the EIR.

4.8(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?

Less Than Significant Impact With Mitigation Incorporated. One of the means through which human exposure to hazardous substances could occur is through accidental release. Incidents that result in an accidental release of hazardous substance into the environment can cause contamination of soil, surface water, and groundwater, in addition to any toxic fumes that might be generated. If not cleaned up immediately and completely, the hazardous substances can migrate into the soil or enter a local stream or channel causing contamination of soil and water. Human exposure of contaminated soil or water can have potential health effects on a variety of factors, including the nature of the contaminant and the degree of exposure.

Existing IRWD Facility

The on-site IRWD facility was formerly owned by the Los Alisos Water District (LAWD) and is historically referenced as the Baker Filtration Plant. This on-site facility consists of a vacant former administrative office building (located within the western portion of the project site), five operating structures (including an administrative building, warehouses, and a former maintenance yard) located within the southern portion of the project site, associated pump structures, two underground water storage tank reservoirs, and two aboveground water storage tanks.

The wastes generated at the facility were reported to consist mainly of oily wastewater, oily soil, and debris. According to the Phase I ESA, waste materials generated on site include Waste Flammable Liquids, Waste Aerosols (Flammable), Waste Propane, and Waste Corrosive Liquids. Other hazardous materials reported at the facility include Non-RCRA Hazardous Waste Liquid and Non-RCRA Hazardous Waste Solid in quantities totaling two drums, one poly, and an oil/water mixture of Non-RCRA Hazardous Waste Liquid in the amount of 300 gallons.

A former 600-gallon wastewater underground storage tank was removed from this facility. The 600-gallon wastewater tank was used to collect wastewater from a cleaning area that serviced automobiles and equipment. The former underground storage tank was reported to be in good condition prior to removal, with no cracks or obvious corrosion observed. Soil samples were collected and clean fill was used to fill the void left by the tank. On January 8, 2003, contractors returned to remove the remaining piping from the former underground storage tank and sump. Soil samples were collected. Both sets of samples from the tank removal and the later piping removal showed no soil contamination in the area surrounding the former underground storage tank.

Three former underground storage tanks containing petroleum-related products (each with a capacity of 1,000 gallons) were historically noted at this facility; formal tank removal records are not on file at the Orange County Health Care Agency (OCHCA). One of these underground storage tanks reported the release of diesel fuel oil and additives to the soil. The case was closed per the Regional Water Quality Control Board (RWQCB) in 1990.

Potential On-Site Groundwater Contamination

The potential for on-site groundwater contamination as a result of on-site activities (current and historic) are low. However, on-site contamination may have resulted from adjacent off-site properties that have reported contamination. The adjacent properties to the northwest are occupied by office parks and to the north by office/warehouse business parks. Sunstate Equipment Company is located to the northeast of the project site, at the eastern terminus of Indian Ocean Drive. This light industrial use is known to maintain underground storage tanks, some of which have reported releases of hazardous materials to the environment. According to the Phase I ESA, adjacent properties that have reported contamination have all received case closure from the appropriate regulatory agency. Therefore, no on-site groundwater contamination is anticipated as a result of off-site facilities.

Activities conducted at the former El Toro MCAS (located approximately 3,100 feet to the northwest) generated oils, solvents, paint residues, hydraulic fluid, used batteries, and other wastes. Wastes were placed in unlined MCAS landfills, and burned or covered with soil. The first indication of contamination at the MCAS occurred during routine water-quality monitoring in 1985, when the Orange County Water District (OCWD) discovered trichloroethene (TCE) in groundwater at an irrigation well located approximately 3,000 feet downgradient of the El Toro MCAS. In July 1987 the Santa Ana RWQCB issued a cleanup and abatement order to the Marine Corps and in June 1988, the EPA recommended adding the El Toro MCAS to the National Priorities List (NPL) of the Superfund Program due to volatile organic compounds (VOC) groundwater contamination at the MCAS boundary and in the agricultural wells west of the MCAS. The El Toro MCAS was added to the NPL on February 15, 1990. Since that time, numerous environmental assessments and remediation techniques have been conducted.

Due to the distance of the former El Toro MCAS to the project site (being located approximately 3,100 feet to the northwest), and the northwesterly groundwater gradient indicated on the OCWD Groundwater Gradient Maps, releases at the former El Toro MCAS are considered to have low potential to have adversely impacted the groundwater underlying the project site.

Structures

The former administrative building is proposed to be demolished prior to grading and construction of new buildings. Demolition of structures could expose construction personnel and the public to hazardous substances such as asbestos containing materials (ACM) or lead-based paints (LBP), depending on the age of the structure. Portions of the existing IRWD facility appeared to have been constructed by at least 1977. Pump features appeared to have been constructed by at least 1989. The former administration building was constructed in the west-central portion of the project site in 1990. Thus, the existing structures associated with the on-site IRWD facility may contain ACMs and/or LBPs. Prior to demolition, an asbestos survey of each structure would be conducted by a qualified environmental professional (Mitigation Measure HAZ-1). Also, LBPs may be present and a qualified environmental professional would be required to confirm the presence or absence of LBPs (HAZ-2). Should LBPs be present, proper disposal at an appropriate permitted disposal facility would be required, should demolition occur. With implementation of HAZ-1 and HAZ-2, impacts pertaining to the release of ACMs/LBPs associated with on-site structures would be reduced to less than significant levels.

Potential Agricultural Use-Related Soil Contamination

Based on the Phase I ESA, the northern portion of the project site (proposed for residential use) was historically used for agricultural purposes until 1990. Therefore, a combination of several commonly used pesticides (i.e., DDD, DDT, DDE), which are now banned may have been used throughout the historic agricultural portions of the project site.

The historical use of agricultural pesticides may have resulted in pesticide residues of certain persistence in soil at concentrations that are considered to be hazardous according to established Federal regulatory levels. The primary concern with historical pesticide residues is human health risk from inadvertent ingestion of contaminated soil, particularly by children.

Mitigation Measure HAZ-3 requires that soil sampling be conducted on the historic agricultural portions of the project site, as determined by a qualified Phase II specialist, prior to issuance of a grading permit. The sampling would determine if pesticide concentrations exceed established regulatory requirements and would identify further site characterization and remedial activities, if necessary. Upon implementation of HAZ-3, potential impacts pertaining to pesticide residues would be reduced to less than significant levels.

Conclusion

Upon project implementation, the IRWD water utility operations would remain on-site, with expansion of the facilities in the future. Hazardous materials anticipated to be used on-site at a future date would be similar to the existing hazardous materials maintained, used, and/or transported at the site currently. The IRWD would be required to comply with applicable Federal, State, and local laws regulating the generation, handling, transportation, and disposal

of hazardous materials and waste. Following compliance with Federal, State, and local laws, potential impacts pertaining to an accidental release of hazardous materials associated with the IRWD facility would be less than significant. Also, with implementation of the recommended Mitigation Measures HAZ-1 and HAZ-2, potential impacts from disturbance to existing structures would be reduced to less than significant levels. With implementation of HAZ-3, potential impacts from soil disturbance would also be reduced to less than significant levels.

Overall, with implementation of Mitigation Measures HAZ-1 through HAZ-3, the project would not 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. This topic will not be further analyzed in the EIR.

Mitigation Measures:

HAZ-1 Prior to demolition activities, an asbestos survey shall be conducted by a qualified environmental professional to determine the presence or absence of asbestos. If present, asbestos removal shall be performed by a State-certified asbestos containment contractor in accordance with the Toxic Substance Control Act (TSCA), (15 U.S.C. Section 2601 et. seq.) Title 2 – Asbestos Hazard Emergency Response for handling asbestos. (Source: OSA PEIR, Legal Requirements for Hazards and Hazardous Materials)

HAZ-2 If during demolition of the structures, paint is separated from the building material (e.g., chemically or physically), the paint waste shall be evaluated independently from the building material by a qualified environmental professional to determine its proper management. According to the Department of Toxic Substances Control, if paint is not removed from the building material during demolition (and is not chipping or peeling), the material may be disposed of as construction debris (a non-hazardous waste). The landfill operator shall be contacted in advance to determine any specific requirements they may have regarding the disposal of lead-based paint materials, if necessary. (Source: OSA PEIR, Legal Requirements for Hazards and Hazardous Materials)

HAZ-3 Prior to issuance of a grading permit, soil sampling shall occur within the portions of the project site that have historically been utilized for agricultural purposes and may contain pesticide residues in the soil, as determined by a qualified Phase II specialist. The sampling shall determine if pesticide concentrations exceed established regulatory requirements and shall identify further site characterization and remedial activities, if necessary. (Source: OSA PEIR, Legal Requirements for Hazards and Hazardous Materials)

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

Less Than Significant Impact. The nearest school is the Fulbright Montessori Academy (located at 20411 James Bay Circle approximately 0.25 miles north of the project site). As previously stated in Response 4.8(a), hazardous materials are not typically associated with residential or civic center uses. Hazardous materials could be used in limited quantities in

association with the project operations, including cleaning and other maintenance products and landscaping. The routine transportation, use, and disposal of these materials would be subject to a wide range of laws and regulations, including those listed in Response 4.8(a), that are intended to minimize potential health risks associated with their use or the accidental release of such substances. The project would not emit hazardous emissions. Although the project may handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, implementation of the existing Federal, State, and local laws and regulations that regulate hazardous materials storage, use, and transport would reduce these impacts to less than significant levels. This topic will not be further analyzed in the EIR.

4.8(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?

Less Than Significant Impact. According to the Phase I ESA, the on-site IRWD facility was listed on the Haznet database (which records facility and manifest data), Historical UST (underground storage tank) Registered Database, the Resource Conservation and Recovery Act (RCRA) regulated hazardous waste generator notifiers list, the California State Water Resources Control Board (SWRCB) UST inventory list, and the EPA's LUST Database (leaking underground storage tanks) for the State.

Reported wastes associated with this facility include the following:

- Oil/water separation sludge;
- Waste oil and mixed oil;
- Aqueous solution with less than 10 percent total organic residues;
- Unspecified oil-containing waste;
- Paint sludge, other organic solids;
- Alkaline solution without metals (pH greater than 12.5);
- Off-specification, aged, or surplus inorganics;
- Other inorganic solid waste;
- Unspecified solvent mixture waste; and
- Laboratory waste chemicals.

Three underground storage tanks were reported at 21082 Wisteria, the IRWD (former Baker Filtration Plant) maintenance area. These tanks are expected to have a low probability to adversely affect soils and groundwater at the project site. A leaking underground storage tank was reported for the on-site facility LAWD, located approximately 500 feet south of the proposed residential development. A release was discovered on August 30, 1989 during tank closure activities and was reportedly diesel fuel oil and additives that affected soil only. The case was closed on February 28, 1990. Based on the conclusions presented in the Phase I ESA, these reported listings associated with the IRWD facility are considered to have a low potential to currently impact soils or groundwater at the project site.

As previously stated in Response 4.8(b), upon project implementation, the IRWD would remain on-site. Hazardous materials anticipated to be used on-site at a future date would be similar to the existing hazardous materials maintained, used, and/or transported at the site currently. The IRWD would be required to comply with applicable Federal, State, and local laws regulating the generation, handling, transportation, and disposal of hazardous materials and waste. With

implementation of Federal, State, and local laws, hazardous materials-related impacts associated with the on-site IRWD facility is less than significant, as the existing on-site IRWD facility would not create a significant hazard to the public or the environment. This topic will not be further analyzed in the EIR.

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

No Impact. The project site is not located within two miles of any commercial or private airport or airstrip. Therefore, project implementation would not result in a airport-related safety hazard for people residing or working in the project area. This topic will not be further analyzed in the EIR.

4.8(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. Refer to Response 4.8(e).

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

Less Than Significant Impact With Mitigation Incorporated. The City is currently contracted to and served by the Orange County Fire Authority for fire protection services and the Orange County Sheriff's Department for police services. Regional accesses to the project site include Bake Parkway, Lake Forest Drive, and Commercentre Drive. During construction of the project, temporary road or lane closures (which could potentially block emergency access and/or evacuation routes) may be required along roadways near the project site. Any such impacts would be limited to the construction period and would affect only adjacent streets or intersections, and as such, would be unlikely to interfere with emergency response vehicles (e.g., fire, police, or ambulance). Also, the project would be required to adhere to HAZ-4. HAZ-4 requires future development to notify the OCFA, Orange County Sheriff's Department (OCSD), and the City Public Works Department of construction activities that would impede movement (such as road or lane closures) along roadways immediately adjacent to the development area, in order to allow for uninterrupted emergency access and maintenance of evacuation routes.

Also, any future development proposed within the project site would be subject to the *General Circulation System Development Standards* (Chapter 6.0) of the proposed Area Plan, which require that all tentative tract map(s) (subject to the Area Plan), provide for adequate emergency and fire access per the OCFA requirements. All future tentative tract maps are subject to approval by the OCFA.

Following compliance with HAZ-4 and Chapter 6.0 of the Area Plan, the project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant and this topic will not be further analyzed in the EIR.

***Mitigation Measures*:**

HAZ-4 At least three business days prior to any lane closure, the construction contractor shall notify the Orange County Sheriff's Department (OCSD) and Orange County Fire Authority (OCFA), along with the Development Services Department, of construction activities that would impede movement (such as road or lane closures) along roadways immediately adjacent to the development area, to allow for uninterrupted emergency access and maintenance of evacuation routes. (Source: OSA PEIR MM 3.7-3)

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

No Impact. Development associated with project implementation would replace existing disturbed native and non-native plant species with ornamental landscaping, however, this is not anticipated to create hazardous conditions associated with brush fires. The project site is located within a developed portion of the City and is not located with a wildland area (based on the OCFA's Very High Fire Hazard Severity Zone/Special Fire Protection Area map, dated November 7, 2007). People or structures would not be subject to a wildland fire hazard, as the subject area is not in a moderate, high, or very high fire hazard area. Also, the proposed structures would be constructed to meet or exceed current fire codes. Thus, project implementation would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. No impacts would occur and this topic will not be further discussed in the EIR.

4.9 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. During project construction, substantially impair the water quality of receiving waters? In considering water quality, factors such as water temperature, dissolved oxygen levels, and turbidity should be considered.			✓	
b. Following project construction, substantially impair the water quality of receiving waters? In considering water quality, factors such as water temperature, dissolved oxygen levels, and turbidity should be considered.		✓		
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in flooding on- or off-site?			✓	
d. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?			✓	
e. 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 that would result in substantial erosion or siltation on- or off-site?			✓	
f. Otherwise result in substantial increase of erosion or siltation on- or off-site?			✓	
g. Change runoff flow rates or volumes in a manner that substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, and results in a significant adverse environmental impact?			✓	
h. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems?			✓	
i. Increase impervious surfaces and runoff in a manner that substantially impairs water quality or causes other significant adverse environmental impacts?		✓		
j. Provide substantial additional sources of polluted runoff or increase the discharges of pollutants such as heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash?		✓		
k. For projects that are tributary to water bodies that are listed as impaired on the Clean Water Act section 303(d) list, result in an increase of any pollutant for which the water body is listed as impaired?		✓		
l. Substantially degrade or impair an environmentally sensitive area?			✓	
m. Substantially degrade or impair surface water quality of marine, fresh, or wetland waters?		✓		
n. Substantially degrade or impair groundwater quality?			✓	
o. Substantially degrade aquatic, wetland, or riparian habitat?		✓		
p. Otherwise substantially degrade water quality?		✓		
q. Cause or contribute to an exceedance of applicable surface water or groundwater receiving water quality objectives or degradation of beneficial uses?		✓		
r. Violate any other water quality standards or waste discharge requirements?		✓		

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
s. 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 (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)?			✓	
t. 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 delineation map?				✓
u. Place within a 100-year flood hazard area structures that would impede or redirect flows?				✓
v. 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?				✓
w. Expose people or structures to a significant risk of inundation by seiche, tsunami, or mudflow.				✓

This section is based on the information, findings, and conclusions presented in the *Preliminary Water Quality Management Plan* (PWQMP), prepared by Fuscoe Engineering, Inc., dated June 12, 2009, revised March 17, 2010, and the *Preliminary Hydrology Report* (PHR), prepared by Fuscoe Engineering, Inc., dated March 2010; refer to Appendix E, *Hydrology Report and Water Quality Management Plan*.

Based on the City's *CEQA Significance Thresholds Guide*, a project would normally have a significant impact if it would:

- 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 above pre-development condition in a manner which would result in flooding on- or off-site.

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

- 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.

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

- 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.

- Cause inundation by seiche, tsunami, or mudflow.

- Deposit sediment and debris materials within existing channels obstructing flows.
- Exceed the capacity of a channel and cause overflow during design storm conditions.
- 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).
- Adversely change the rate, direction or flow of groundwater.
- Have an impact on groundwater that is inconsistent with a groundwater management plan prepared by the water agencies with the responsibility for groundwater management.
- Violate any water quality standards or waste discharge requirements.
- Cause a significant alteration of receiving water quality during or following construction.
- Substantially degrade groundwater quality.
- 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 substantial erosion or siltation on- or off-site.
- Create or contribute runoff water which would generate substantial additional sources of polluted runoff.
- Substantially degrade water quality by discharge which affects the beneficial uses (i.e., swimming, fishing, etc.) of the receiving or downstream waters.
- Increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list.

Impact Analysis

4.9(a) During project construction, substantially impair the water quality of receiving waters? In considering water quality, factors such as water temperature, dissolved oxygen levels, and turbidity should be considered.

Less Than Significant Impact. As part of Section 402 of the Clean Water Act, the United States Environmental Protection Agency (EPA) has established regulations under the National Pollution Discharge Elimination System (NPDES) program to control direct stormwater discharges. In California, the State Water Resources Control Board (SWRCB) administers the NPDES permitting program and is responsible for developing NPDES permitting requirements. The NPDES program regulates industrial pollutant discharges, which include construction activities. The SWRCB works in coordination with the Regional Water Quality Control Boards (RWQCB) to preserve, protect, enhance, and restore water quality. The project site is located within the jurisdiction of the Santa Ana RWQCB.

The project site is located within the larger San Diego Creek watershed, which drains into Upper Newport Bay. Smaller tributaries to San Diego Creek include Serrano Creek, which trends along the eastern portion of the project site in a southwest direction. The project site currently consists of vacant land and the existing IRWD facility.

Water quality impacts could occur during the earthwork and construction phase (when the potential for erosion, siltation, and sedimentation would be the greatest) and following construction, but before the establishment of ground cover (when the erosion potential may remain relatively high).

Construction of the project would include activities with the potential to contribute to water quality degradation. Typical pollutants resulting from construction activities include, but are not limited to, nutrients; heavy metals; pesticides and herbicides; toxic chemicals related to construction and cleaning; waste materials including wash water, paints, wood, paper, concrete, food containers, and sanitary wastes; fuel; and lubricants.

The project is regulated under the NPDES Phase I Municipal Stormwater Permit issued by the Santa Ana RWQCB for Orange County (Order No. R8-2009-0030 and NPDES Permit No. CAS618030), and the Statewide Construction General Permit (CGP) (SWRCB Order No. 2009-0009-DWQ (2009)) for stormwater discharges and urban runoff. Prior to the issuance of a grading permit, the project Applicant would need to file a Notice of Intent (NOI) with the SWRCB via the Storm Water Multi-Application Reporting and Tracking System (SMARTS) and comply with the requirements of the CGP. This would include the preparation of a Stormwater Pollution Prevention Plan (SWPPP) incorporating best management practices (BMPs) for construction-related control of the project site runoff. Requirements include construction sediment and erosion control plans in connection with proposed grading activities.

The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list BMPs the discharger would use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

It is noted that the SWPPP is a “live” document and is kept current by the person responsible for its implementation. Preparation of, and compliance with, a required SWPPP and Erosion Control Plan would effectively prevent the degradation of water quality resulting from project construction, including impacts to San Diego Creek. Therefore, project construction activities would not substantially impair the water quality of receiving waters. Less than significant impacts would result and this topic will not be further discussed in the EIR.

4.9(b) Following project construction, substantially impair the water quality of receiving waters? In considering water quality, factors such as water temperature, dissolved oxygen levels, and turbidity should be considered.

Less Than Significant Impact With Mitigation Incorporated.

Existing Conditions

The project site ultimately drains into Serrano Creek within the larger San Diego Creek watershed. Based on the PWQMP, Serrano Creek is not listed as impaired. However, Reach 2 of the San Diego Creek is 303(d) listed as impaired for metals, and Reach 1 is impaired for fecal coliform, selenium, and toxaphene. San Diego Creek has Total Maximum Daily Loads (TMDL) established for nutrients (nitrogen and phosphorous), sediment, and toxics (pesticides and metals in water and sediment). The OSA PEIR stated that water quality impacts related to pesticide use would be significant and unavoidable with development of the projects considered as part of the *Opportunities Study* (which included the proposed project site).[8]

Regulatory Requirements

Once a water body has been listed as impaired, a TMDL for the constituent of concern (pollutant) must be developed for that water body. A TMDL is an estimate of the daily load of pollutants that a water body may receive from point sources, nonpoint sources, and natural background conditions (including an appropriate margin of safety), without exceeding its water quality standard. Those facilities and activities that are discharging into the water body, collectively, must not exceed the TMDL.

TMDLs have been developed jointly for the San Diego Creek watershed and the Newport Bay, of which Serrano Creek is tributary to. These pollutants include toxics, nutrients, and sediments. The Santa Ana RWQCB established the nutrient TMDL in 1998 and the sediment TMDL in 1999. The nutrient TMDL establishes targets for reducing the annual loading of nitrogen and phosphorus to Newport Bay by 50 percent and meeting the numeric and narrative water quality objectives by 2012. The sediment TMDL has similar objectives, to reduce the annual average sediment load in the San Diego Creek watershed from a total of 250,000 tons per year to 125,000 tons per year, calculated over a ten year period (a 50 percent reduction). Moreover, EPA Region 9 established the TMDL for toxics in 2002. It covers 14 different constituents (i.e., chlorpyrifos and diazinon [organophosphate pesticides]; chlordane, dieldrin, DDT, PCBs, and toxaphene [organochlorinated compounds]; cadmium, copper, lead and zinc [metals]; selenium; chromium and mercury [metals, specific to Rhine Channel only]). Currently, the only constituents that have been considered for approval by the Santa Ana RWQCB are the organophosphate pesticides.

Santa Ana RWQCB Requirements

Since 1990, operators of municipal separate storm drain systems are required to develop a stormwater management program designed to prevent harmful pollutants from impacting water resources via stormwater runoff. The Orange County Stormwater Program (Stormwater Program) is a cooperative of the County of Orange, Orange County Flood Control District (OCFCD) and all 34 Orange County cities. As the Principal Permittee on the Santa Ana RWQCB NPDES permit, the County of Orange guides development and implementation of the Stormwater Program, collaborating regularly with co-permittees to ensure compliance and prevent ocean pollution.

[8] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.8-28.

The Orange County Stormwater Program's specific water pollution control elements are documented in the 2003 Drainage Area Management Plan (DAMP). The DAMP satisfies the NPDES permit conditions for creating and implementing a stormwater management program. The intent of the DAMP is to reduce pollutant discharges to the maximum extent practicable (MEP) for the protection of water quality at receiving water bodies and the support of designated beneficial uses. The DAMP contains guidance on both structural and nonstructural BMPs for meeting these goals.

While the DAMP provides a foundation for the prevention of pollutants from entering receiving waters to the MEP, the description and detail of how this is being accomplished on a local level is contained in a Local Implementation Plan (LIP). The LIP is designed to work in conjunction with the DAMP. The City and County have developed a comprehensive LIP that is specific to their jurisdiction. The Lake Forest Local Implementation Plan (LFLIP) takes precedence over DAMP requirements.

Project Conditions

Although the project would not result in direct discharges to San Diego Creek, the project would discharge to Serrano Creek, which is tributary to San Diego Creek and listed as impaired. With implementation of the DAMP requirements, BMPs would be developed for the project site. Typical operational BMPs include, but are not necessarily limited to, controlling roadway and parking lot contaminants by installing oil and grease separators at storm drain inlets, cleaning parking lots on a regular basis, incorporating peak-flow reduction and infiltration features (such as grass swales and rain gardens) into landscaping, and implementing educational programs. The project would be required to be consistent with both the City and County requirements for the design of a drainage system. The primary goal of the stormwater management system is to prevent flooding and protect property by providing safe, effective site drainage. With implementation of the required Drainage Development Standards proposed by the Area Plan, the project would be required to prepare a WQMP in accordance with the requirements of the NPDES standards.

The project would be required to comply with the requirements of the NPDES permit and BMPs in order to control discharges of pollutants into receiving waters. Implementation of the Area Plan would minimize impervious surfaces through the incorporation of landscaped areas over substantial portions of the site such as common areas, parkways, medians, parks, and open space areas. The streets and sidewalks would be designed with minimum width requirements in order to minimize impervious surfaces where feasible. All dry weather flows and low flows from the residential areas and streets would be routed through water quality basins to minimize the direct connection of runoff from impervious areas to downstream off-site areas. Water quality basins that combine extended detention and wetland vegetation would also be utilized to promote reduced runoff volumes. Also, underground storage areas would provide further infiltration of runoff. Management programs would be designed and implemented by the Homeowner's Association (HOA) to maintain all the common areas within the project site. These programs would work to reduce the potential pollutant sources of fertilizer and pesticide uses, utilization of water-efficient landscaping practices, and proper disposal of landscape wastes.

In order to further reduce water quality impacts during project operations the PWQMP would require that all homeowners be given a copy of the recorded Covenants, Conditions, and Restrictions (CC&Rs), which would contain details on educational materials and restrictions to reduce pollutants from reaching the storm drain system, proper handling and disposal of contaminants, trash management and litter control, irrigation and landscaping practices, fertilizer applications, and household waste management practices.

The project would involve similar landscaping requirements as those described for Alternative 7 of the OSA PEIR. The OSA PEIR recommended Mitigation Measures MM 3.8-2 through 3.8-4 (refer to Mitigation Measures HYD-1 through HYD-3), which require a landscape design plan, participation in the Nitrogen and Selenium Working Group, and implementation of BMPs (such as a nutrient management program) to reduce the amount of nutrients enter the watershed. Also, a pesticide management program would be developed to reduce the amounts of pesticides entering the watershed through minimizing the use of pesticides and emphasizing non-chemical controls. The OSA PEIR concluded pesticide use impacts on water quality would be significant and unavoidable.[9] The City adopted a finding and statement of overriding considerations pertaining to pesticide use impacts on water quality upon adoption of the OSA PEIR. Project implementation would not result in greater impacts to water quality as a result of pesticide use than those analyzed in the OSA PEIR. Thus, impacts in this regard are less than significant with implementation of the PWQMP and Mitigation Measures HYD-1 through HYD-3. With adherence to the NPDES permit and SWPPP requirements, and compliance with the recommended Mitigation Measures HYD-1 through HYD-3, project operations would not substantially impair the water quality of receiving waters. Impacts are less than significant and this topic will not be further analyzed in the EIR.

Mitigation Measures:

HYD-1 All City landscape contractors and project developers shall be required, as part of their contract, to submit to the City a landscape design plan include the following elements:

- Maximized use of climate-appropriate 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; and
- Minimal use of fertilizers and pesticides. (Source: OSA PEIR Mitigation Measure MM 3.8-2)

HYD-2 Prior to the issuance of a grading permit, the Applicant shall be required to coordinate with the Nitrogen and Selenium Working Group in order to establish eligibility for the *de minimus* permit implemented by the Santa Ana Regional Water Quality Control Board. (Source: OSA PEIR Mitigation Measure MM 3.8-3)

[9] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.8-28.

HYD-3 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.ord /html/wurmp_sanluis_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 non-chemical controls (see the City of San Francisco's Integrated Pest Management Program for example at http://www.sfgov.org/site/frame.asp?u= http://www.sfwater.org/). These plans shall be approved by the City prior to issuance of a grading permit. (Source: OSA PEIR Mitigation Measure MM 3.8-4)

4.9(c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in flooding on- or off-site?

Less Than Significant Impact. Stormwater drainage in the City is mostly provided by a network of local drainage facilities. Currently, the project site is only partially developed with water treatment-related land uses. Project implementation would increase the impervious surfaces at the project site. This increase in surface runoff may result in flooding occurrences, if not properly designed (e.g., adequate capacity to accommodate surface flows), in association with on- and off-site storm drain facilities.

Methodology

The PHR was prepared in conformance with the Orange County Hydrology Manual. For the purposes of this analysis, the 100 Year storm event was calculated. The existing hydrology was calculated for the discharge to Serrano Creek that would be affected by the project. A preliminary storm drain layout was used, as no specific storm drain or street layouts are available at this time. In addition to the 100 Year storm event, the Two Year storm event under existing and proposed conditions was calculated per the Santa Ana RWQCB requirements.

It is noted that the existing IRWD facility is not included as part of this analysis, as this facility would not change as a result of Serrano Summit. Any change to the IRWD water treatment facility would be subject to a separate environmental analysis. No impacts would result in this regard.

Existing On-Site Drainage Patterns and Facilities

Water from the site currently runs off in several directions: toward the City's storm drain system along Biscayne Bay Drive; within existing residential uses to the southwest and west of the site; and to the west onto vacant lands. The remainder of the project site drains east, in which approximately 200 cubic feet per second (cfs) of flow is released into Serrano Creek. Currently, there is no run-off from off-site properties onto the project site.

There are a number of stormwater facilities that currently serve the project site. These basins, risers, outlets, and pipes are in various states of repair. Many of the basins are overgrown with brush and several of the outlet pipes are partially buried as a result of silt build-up. The existing

on-site drainage flows and facilities on-site are depicted on Exhibit 4.9-1, *Existing Drainage Hydrology Map*, and discussed below.

Northwestern Biscayne Bay Drive Access Road

On-site areas located along Biscayne Bay Drive (herein referenced as "OS-1 and -2") currently sheet flow toward Biscayne Bay Drive, where flow is picked up via an existing street catch basin.

Western Portions of the Project Site

Two small areas on the western portion of the project site (herein referenced as "OS-6 and -7") flow to the existing developed areas (to the southwest and west) and their existing terrace drains. Other western portions of the project site (herein referenced as "OS-8 and -9") drain to vacant lands located to the west of the project site.

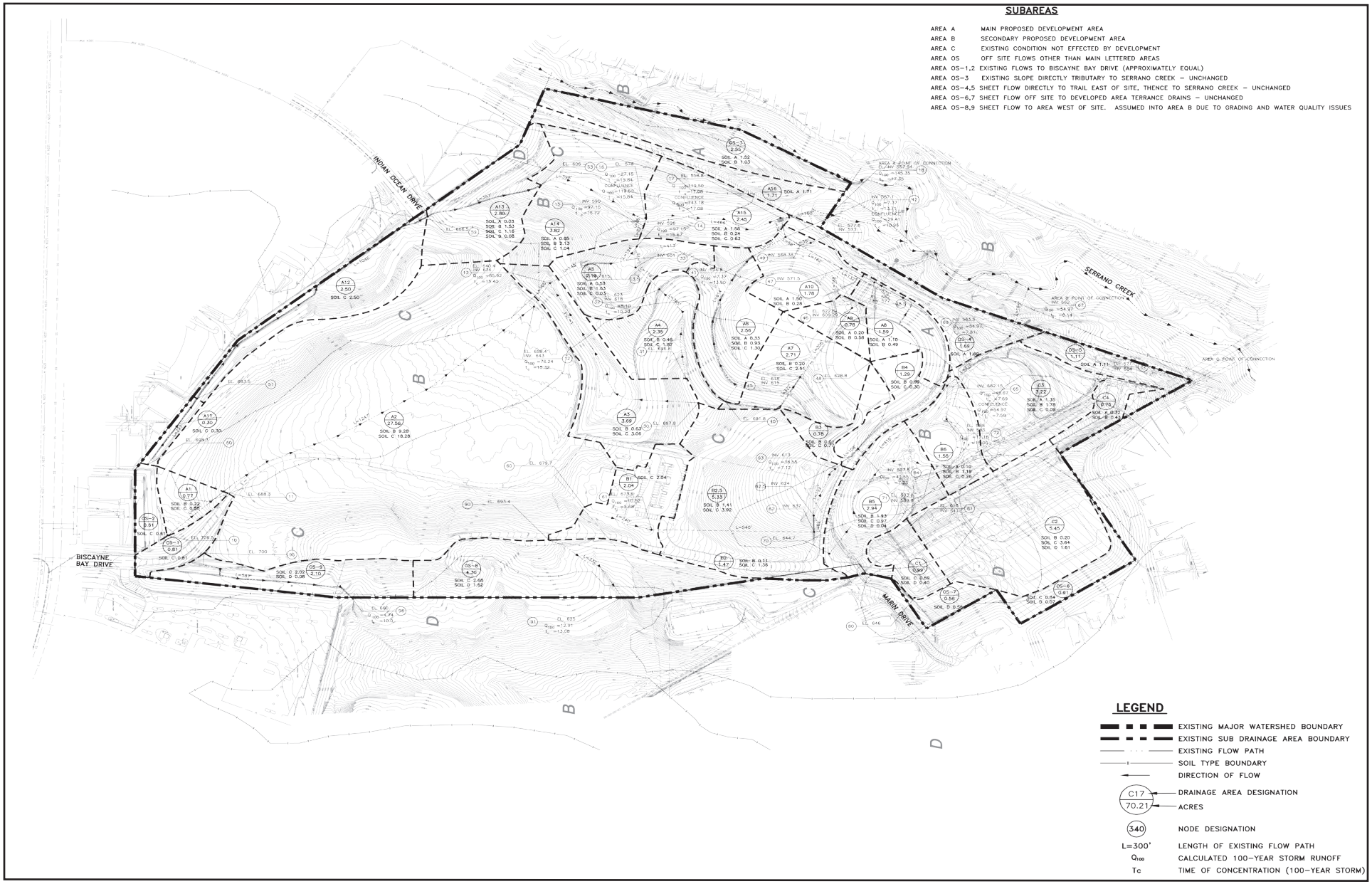
Remainder of the Project Site

The majority of the project site (herein referenced as "A, B, and C") drains in an easterly direction into Serrano Creek via three existing pipe discharge points. Three small areas (herein referenced as "OS-3, -4, and -5") sheet flow directly to Serrano Creek.

- Pipe 'A' drains a large portion of the project site, including the two on-site drainages located at the northeasterly portion of the site.
- Pipe 'B' drains the IRWD facility, a portion of the "emergency storage reservoir" area, and the northerly parts of the aboveground storage tank areas.
- Pipe 'C' drains the southerly portion of the IRWD aboveground storage tank areas.

Project Hydrological Changes

Site specific drainage patterns would change due to project-related grading and increases in the amount of impermeable surfaces on the site from structures and other areas (i.e., parking lots, driveways, walkways, etc.). Increases in impervious surfaces would in turn increase runoff volumes entering City storm drains, drainage systems, and local streams. Seven local storm drain systems are proposed as part of the project (herein referenced as Storm Drain Lines "A" through "G"). It is noted that the proposed drainage system has been designed in accordance with Mitigation Measure MM 3.8-5 of the OSA PEIR. MM 3.8-5 requires that the project-specific hydrology and hydraulics study determine potential stormwater runoff rates and peak flows for the City and County design storms, as well as the 100 Year storm for both existing and project conditions. Upon project implementation, the majority of flows at the northwestern, western, and southwestern portions of the project site would drain east, rather than to off-site uses. Although some flows would continue to enter the City's storm drain system, these flows would be less than the flows under existing conditions. The remainder of the project site would flow east, toward Serrano Creek. Storm Drain Lines A through F would drain the majority of the project site to Outlet B. Storm Drain Line G would drain the future development on Lot 13, which is located adjacent to Serrano Creek, to Outlet A. For the proposed project, future development on Lot 13 would involve a Civic Center. For the project alternative, future development on Lot 13 would involve residential uses. However, in either case, the graded pad and underlying drainage facilities would be the same.



Source: Fuscoe Engineering, July 28, 2010.

NOT TO SCALE

RBF CONSULTING

04/11 • JN 10-107199

SERRANO SUMMIT AREA PLAN 2009-01 AND
TENTATIVE TRACT MAP NO. 17331
INITIAL STUDY / ENVIRONMENTAL CHECKLIST

Existing Drainage Hydrology Map

Exhibit 4.9-1

100 Year Storm Event

As depicted in Table 4.9-1, *Flow Discharge into Serrano Creek*, the total 100 Year peak discharge from both outlets would be approximately 167 cfs with detention. This change in runoff would be approximately 33 cfs less than existing conditions.

Table 4.9-1
Flow Discharge into Serrano Creek

Existing Outlet	Existing 100 Year Peak Discharge (cubic feet per second)	Proposed 100 Year Peak Discharge (cubic feet per second)	Change in Discharge after Project Implementation (cubic feet per second)
A	145	33	-112
B	55	134	79
Total	200	167	-33

Source: Fuscoe Engineering, Inc., *Preliminary Hydrology Report*, dated March 2010.

As the project would result in an overall decrease in discharge (approximately 33 cfs less than existing conditions), the project would not result in flooding on- or off-site and impacts are less than significant. This topic will not be further analyzed in the EIR.

Two Year Storm Event

Per the existing Santa Ana RWQCB permit requirements, the project would only be allowed to discharge an increase of five percent compared to existing conditions, during the Two Year storm event. As depicted in Table 4.9-2, *Two Year Storm Event Conditions*, the existing condition volume during a Two Year storm event is 5.0 acre-feet. Five percent of the existing condition volume is 0.25 acre-feet. Therefore, the acceptable volume discharge at the project site would be 5.25 acre-feet. The project would result in a Two Year storm event volume of 8.32 acre-feet. Thus, per the Santa Ana RWQCB requirements, approximately 3.07 acre-feet[10] would be required to be retained on-site through the use of on-site dry wells or basins. The project proposes two on-site detention basins for the purposes of retaining the 3.07 acre-feet of water on-site. Following compliance with the Santa Ana RWQCB requirements, the project would not result in flooding on- or off-site and impacts would be less than significant. This topic will not be further analyzed in the EIR.

Table 4.9-2
Two Year Storm Event Conditions

Sub Area	Existing Condition				Proposed Condition			
	Area (acres)	Two Year Storm Event (cfs[1])	TC[2] (minutes)	Volume (acre-feet)	Area (acres)	Two Year Storm Event (cfs[1])	TC[2] (minutes)	Volume (acre-feet)
Outlet A								
Area A	59.6	38.38	20.96	4.02	--	--	--	--
Civic Center	--	--	--	--	12.4	20.54	6.63	--
Direct to Creek	--	--	--	--	2.95	1.3	25.39	--
Subtotals	*59.6*	*38.38*	*20.96*	*4.02*	*15.35*	*21.84*	*6.63*	*1.63*

[10] This figure was derived from the proposed volume (8.32 acre-feet) minus the acceptable total volume (5.25 acre-feet), which equals the required flow retention on-site (3.07 acre-feet).

Table 4.9-2 [continued]
Two Year Storm Event Conditions

Sub Area	Existing Condition				Proposed Condition			
	Area (acres)	Two Year Storm Event (cfs[1])	TC[2] (minutes)	Volume (acre-feet)	Area (acres)	Two Year Storm Event (cfs[1])	TC[2] (minutes)	Volume (acre-feet)
Outlet B								
Area B	15.4	17.61	8.95	0.98	--	--	--	--
Area A	--	--	--	--	63.4	73.06	8.36	--
Tank Site	--	--	--	--	3.83	3.46	13.07	--
Subtotals	*15.4*	*17.61*	*8.95*	*0.98*	*67.23*	*76.52*	*8.36*	*6.69*
Totals	**75**	**55.99**	**--**	**5.0**	**82.58[3]**	**98.36**	**--**	**8.32**

Notes:
1. cfs – "cubic feet per second"
2. TC – "time of concentration"
3. The difference in area between the existing condition and proposed condition is a result of the inclusion of Areas OS-8 and OS-9. Also, the existing IRWD facility is not included within this acreage, as this site would not change upon project implementation.
4. "--" – Not Applicable.

Source: Fuscoe Engineering, Inc., *Preliminary Hydrology Report*, dated March 2010.

4.9(d) Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

Less Than Significant Impact. Refer to Response 4.9(c). The project would not result in a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. Impacts are less than significant and this topic will not be further analyzed in the EIR.

4.9(e) 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 that would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. Currently, the site is partially developed and used for a water treatment facility. Project implementation would increase the impervious surfaces of the site.

Storm Drain Lines A through F would drain the majority of the project site to the proposed basin, and Outlet B at Serrano Creek. As depicted in Table 4.9-1, the peak 100 Year discharge at this outlet would be approximately 134 cfs. This is approximately 79 cfs greater than existing conditions. Therefore, this proposed outlet would be required to include energy dissipators, baffles, and riprap that would slow down flows in order to reduce the erosion potential at this specific location.

Storm Drain Line G would drain Lot 13 located adjacent to Serrano Creek, which involves the Civic Center for the proposed project and residential uses for the project alternative. Flow would be directed to the existing basin and Outlet A before being released into Serrano Creek. The outlet for this basin joins the existing 72-inch pipe at Outlet A. The peak 100 Year discharge at this outlet would be approximately 33 cfs, or approximately 112 cfs less than existing conditions. Therefore, given that flows discharged to Serrano Creek would be approximately 33 cfs less than existing conditions, the erosion potential at Outlet A would also be less than existing conditions upon project implementation. The reach of the creek upstream

of Outlet B would have a flow reduction, which would in turn reduce the potential for erosion in this reach as well as downstream.

With implementation of the PWQMP, the developers would be responsible for the vegetative establishment on all manufactured or disturbed slopes with a mixture of native species and approved ornamentals by the City. As discussed in Responses 4.9(a) through 4.9(c), the project would implement water quality design features and BMPs that would reduce any potential impacts associated with erosion or siltation on- or off-site to less than significant levels. This topic will not be further analyzed in the EIR.

4.9(f) Otherwise result in substantial increase of erosion or siltation on- or off-site?

Less Than Significant Impact. Refer to Response 4.9(e).

4.9(g) Change runoff flow rates or volumes in a manner that substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, and results in a significant adverse environmental impact?

Less Than Significant Impact. Project implementation would alter the site's drainage patterns, given pervious surfaces would be replaced with impervious surfaces. However, as concluded in Response 4.9(c) above, the project site's discharge would be less than or equal to existing conditions. Therefore, project implementation would not alter the course of Serrano Creek, which is located adjacent to the project site. Moreover, as concluded in Responses 4.4(a), 4.4(b), and 4.4(c), project implementation would result in less than significant impacts to the site's drainage-related biological resources with mitigation incorporated.

4.9(h) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems?

Less Than Significant Impact. Refer to Response 4.9(c).

4.9(i) Increase impervious surfaces and runoff in a manner that substantially impairs water quality or causes other significant adverse environmental impacts?

Less Than Significant Impact With Mitigation Incorporated. Refer to Response 4.9(b).

4.9(j) Provide substantial additional sources of polluted runoff or increase the discharges of pollutants such as heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash?

Less Than Significant Impact With Mitigation Incorporated. Refer to Responses 4.9(a) and 4.9(b).

4.9(k) For projects that are tributary to water bodies that are listed as impaired on the Clean Water Act section 303(d) list, result in an increase of any pollutant for which the water body is listed as impaired?

Less Than Significant Impact With Mitigation Incorporated. Refer to Responses 4.9(a) and 4.9(b).

4.9(l) Substantially degrade or impair an environmentally sensitive area?

Less Than Significant Impact. The project would result in an increase in impervious surfaces as compared to existing conditions. Serrano Creek is not designated as an Environmentally Sensitive Area (ESA). However, according to the DAMP, San Diego Creek is designated as an ESA (down-gradient from the project site). The ESA designation for San Diego Creek stops at the City municipal boundary.

If a new development or redevelopment project in Orange County involves the addition of 2,500 square feet or more of impervious surface and is located within, directly adjacent to (within 200 feet), or discharging directly to receiving waters within environmentally sensitive areas, then it qualifies as a priority project and is subject to additional requirements. Therefore, as the project is not located within, directly adjacent to (within 200 feet), or discharging directly to an ESA designated receiving water, the project is not classified as a priority project and would not be subject to additional requirements.

The proposed PWQMP incorporates site design and BMPs that would reduce potential impacts to San Diego Creek. With implementation of the proposed PWQMP, potential indirect impacts to the ESA designated reach of San Diego Creek would be reduced to less than significant levels. Thus, the project would not substantially degrade or impair an environmentally sensitive area. This topic will not be further analyzed in the EIR.

4.9(m) Substantially degrade or impair surface water quality of marine, fresh, or wetland waters?

Less Than Significant Impact With Mitigation Incorporated. Project implementation would not impact the water quality associated with marine waters. Refer to Responses 4.9(a) and 4.9(b) for a discussion of the project's potential impacts to water quality. Also, as discussed in Response 4.4(c), jurisdictional waters and wetlands are located within the boundaries of the project site. With implementation of Mitigation Measure BIO-4, the Applicant would be required to obtain the appropriate permits from the United States Army Corps of Engineers (ACOE), Santa Ana RWQCB, and the California Department of Fish and Game (CDFG) prior to approval of grading plans. Adherence to the standards and regulations required through implementation of the permitting process would include measures to reduce water quality impacts along Serrano Creek and associated wetland/riparian habitat. Also, measures required by the project as part of the PWQMP would further reduce water quality impacts along the creek. Implementation of the PWQMP requirements and Mitigation Measure BIO-4 would reduce potential water quality impacts associated with fresh waters and wetland waters to a less than significant level. This topic will not be further analyzed in the EIR.

4.9(n) Substantially degrade or impair groundwater quality?

Less Than Significant Impact. Project development would increase demand on water supplies. According to the OSA PEIR, adequate water resources are available to meet project needs without contributing to the degradation of the groundwater basin.[11] Additionally, existing NPDES stormwater regulations (e.g., construction activities, post construction BMPs, and others) would prevent direct contamination and degradation of groundwater resources. However, project development may result in water infiltration (via potential on-site dry wells or basins) of up to approximately 3.07 acre-feet of water during a Two Year storm event per the permit requirements of the Santa Ana RWQCB. With implementation of the proposed PWQMP, the project would be required to reduce potential water quality impacts to the groundwater through site design and BMPs, as appropriate, as well as other routine BMPs that would reduce water quality impacts.

Compliance with NPDES Permits and the PWQMP would prevent discharges of pollutants to groundwater or landscapes where they may infiltrate to groundwater. Compliance with existing regulations and the PWQMP would reduce potential impacts to ground water quality to less than significant levels. Thus, the project would not substantially degrade or impair groundwater quality and this topic will not be further analyzed in the EIR.

4.9(o) Substantially degrade aquatic, wetland, or riparian habitat?

Less Than Significant Impact With Mitigation Incorporated. As discussed in Response 4.4(c), grading activities for development of Lot 13 would result in the removal of approximately 0.206 acres of ACOE/Santa Ana RWQCB jurisdictional waters/wetlands and 1.859 acre of CDFG jurisdictional streambed and associated riparian habitat. With implementation of Mitigation Measure BIO-4, the Applicant would be required to obtain the appropriate permits from the ACOE, Santa Ana RWQCB, and CDFG prior to approval of grading plans. Adherence to the standards and regulations required through implementation of the permitting process would ensure that the project would result in less than significant impacts involving the degradation of aquatic, wetland, or riparian habitat associated with Serrano Creek. With implementation of Mitigation Measure BIO-4, potential impacts would be reduced to less than significant levels and the project would not substantially degrade aquatic, wetland, or riparian habitat. This topic will not be further analyzed in the EIR.

4.9(p) Otherwise substantially degrade water quality?

Less Than Significant Impact With Mitigation Incorporated. Refer to Responses 4.9(a) and 4.9(b).

4.9(q) Cause or contribute to an exceedance of applicable surface water or groundwater receiving water quality objectives or degradation of beneficial uses?

Less Than Significant Impact With Mitigation Incorporated. Refer to Responses 4.9(a) and 4.9(b). Based on the OSA PEIR, the project would not significantly alter attainment of designated beneficial uses for San Diego Creek, as well as its tributaries, compared to existing

[11] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.8-28.

conditions. Thus, impacts would be less than significant and this topic will not be further analyzed in the EIR.

4.9(r) Violate any other water quality standards or waste discharge requirements?

Less Than Significant Impact With Mitigation Incorporated. Refer to Responses 4.9(a) and 4.9(b). Additionally, the General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the ACOE to be outside of federal jurisdiction was adopted by the SWRCB on May 4, 2004. In this order, the SWRCB adopted General Waste Discharge Requirements (General WDRs) for some discharges of dredged or fill materials to waters outside federal CWA regulations. To be eligible for the General WDRs, the discharge must be to a water body deemed by the ACOE to be outside of its jurisdiction for the issuance of federal Clean Water Act Section 404 permits. The General WDRs require dischargers to prepare and implement mitigation plans. The mitigation plans must demonstrate how the dischargers would sequentially avoid, minimize, and compensate for adverse impacts on water bodies, including wetlands, that receive the dredged or fill materials.

With implementation of Mitigation Measure BIO-4, the Applicant would be required to obtain the appropriate permits from the ACOE and Santa Ana RWQCB prior to approval of grading plans. Adherence to the standards and regulations required through implementation of the permitting process would ensure that the project would be consistent with all ACOE/Santa Ana RWQCB water quality standards and waste discharge requirements. With implementation of Mitigation Measure BIO-4, the project would not violate any other water quality standards or waste discharge requirements. This topic will not be further analyzed in the EIR.

4.9(s) 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. Refer to Response 4.9(n).

4.9(t) 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 delineation map?

No Impact. According to the Flood Insurance Rate Map (FIRM), areas located in the immediate vicinity of Serrano Creek are located within the 100 Year flood zone. This area (Lot 13) is proposed to be retained as open space and no structures would be constructed. Therefore, project implementation would not place housing within a 100 Year flood hazard area and no impact would occur. This topic will not be further analyzed in the EIR.

4.9(u) Place within a 100-year flood hazard area structures that would impede or redirect flows?

No Impact. As previously stated in Response 4.9(t), the project would not place structures within a 100 Year flood hazard area. Project implementation would result in no impacts in this regard. This topic will not be further analyzed in the EIR.

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

No Impact. As previously stated in Response 4.9(t), the project site would not place structures or housing within a 100 Year flood hazard area. Also, there are no dams or levees present on or near the project site. Therefore, flooding due to a dam or levee failure would not occur and no impacts would result. This topic will not be further analyzed in the EIR.

4.9(w) Expose people or structures to a significant risk of inundation by seiche, tsunami, or mudflow.

No Impact. The project site is not located close to a reservoir, harbor, lake, or ocean, which would result in a seiche, tsunami, or mudflow. Therefore, no impacts would result in this regard. This topic will not be further analyzed in the EIR. It is noted that the project site is susceptible to potential landslides; refer to Response 4.6(a)(4).

4.10 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?				✓
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			✓	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?		✓		

Based on the City's *CEQA Significance Thresholds Guide*, a project would normally have a significant land use impact if it would:

- Physically divide an established community.
- 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.
- 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, planned community, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- 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.

Impact Analysis

4.10(a) Physically divide an established community?

No Impact. Due to the aircraft flight patterns from the former El Toro MCAS and resultant noise from the aircraft, restrictions were placed on a large swath of land located in the central portion of the City (which includes the project site). This area formerly covered the 65 CNEL contours and airport crash zones, which restricted development in this portion of the City. As the City developed in the southern and northern sections with residential and commercial uses, as well as parks, trails, and other recreational uses, this land use restricted area was developed with industrial, office, and commercial uses devoid of the open space and trail linkages in the remainder of the City. Consequently, the land use restrictions effectively segregated the northern and southern portions of the City.

Under the proposed project, the Area Plan and Tentative Tract Map would allow for the development of residential uses combined with park and recreational areas, a new Civic Center, and the maintenance of existing public facilities. Under the project alternative, the Area Plan and Tentative Tract Map would allow for the development of residential uses combined with park and recreational areas, and the maintenance of existing public facilities. Project implementation would further integrate the northern and southern portions of the City, which are currently segregated. The proposed multi-purpose trail would provide connections between the project site, including the passive/nature park, and the regional trail system (i.e., the Serrano Creek Trail). The trail would provide pedestrian and bicycle connectivity from the northeastern portion of the City along Serrano Creek and adjacent areas. Therefore, with implementation of the project's proposed park and open space uses, including the multi-purpose trail, project implementation would not divide an established community, and a beneficial impact would result. This topic will not be further analyzed in the EIR.

4.10(b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. Based on the City's *CEQA Significance Thresholds Guide*, a project would normally have a significant land use impact if it would "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." Based on the analysis presented in this Initial Study, the project would not result in significant impacts following implementation of existing laws, regulations, standards, and/or recommended Mitigation Measures for the issue areas considered.

The General Plan allows for the development of residential uses, associated park and recreational uses, and a Civic Center as well. Project implementation would not require a General Plan amendment and the project would implement the intended uses for the project site, according to the General Plan's land use designations. Potential indirect impacts, such as those associated with Air Quality and Greenhouse Gas Emissions would not result in a conflict with existing on-site or adjacent land uses that would preclude the use of the land as it was intended by the General Plan. Thus, the project would not conflict with existing on-site or adjacent land uses due to project-related significant unavoidable indirect effects, which would preclude the use of the land as it was intended by the General Plan. This topic will not be further analyzed in the EIR.

Based on the City's *CEQA Significance Thresholds Guide*, a project would normally have a significant land use impact if it would *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, planned community, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect*.

City of Lake Forest General Plan

The General Plan, dated June 21, 1994 (amended July 1, 2010), serves as a policy guide for determining the appropriate physical development and character of the 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:

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

The City's General Plan currently designates the project site as Medium Density Residential (MDR) with a Public Facilities Overlay and Public Facility. The proposed Area Plan has been formulated to be consistent with the General Plan's goals, policies, and land use designations. Area Plan consistency with the General Plan is provided in the Area Plan, as follows:

- Provides a balanced mix of residential, recreation, open space, public facilities, and civic uses;
- Is designed to enhance the physical attributes of the project site;
- Includes compatible land uses and architectural and landscape plans;
- Improves fiscal stability of the City through the payment of impact fees;
- Incorporates a comprehensive network of streets, private drives, and alleys;
- Promotes alternate modes of transportation;
- Provides sufficient parking;
- Includes public and private neighborhood parks and open space;
- Preserves drainage along Serrano Creek;
- Incorporates energy conservation features and encourages recycling;
- Includes water conservation measures;
- Includes a Fuel Modification Plan;
- Incorporates design features to address flood control;
- Includes traffic calming measures; and
- Incorporates noise attenuating features (i.e., walls).

Moreover, pursuant to GPA 2008-02C and Zone Change 2008-03 (and associated Development Agreement), which were approved by the City Council in July and August 2008, a development limit of 833 dwelling units was established for Site 3 (the project site). Under the proposed project, a maximum of 608 residential dwelling units in a variety of density ranges and housing types are proposed. As allowed by the Public Facility Overlay, Planning Area 13 proposes development of a Civic Center. Under the project alternative, a maximum of 833 residential dwelling units in a variety of density ranges and housing types are proposed. The project would be in compliance with the General Plan's development limit established for the project site.

Overall, the Area Plan is consistent with the General Plan's land use designations, goals, and policies. Therefore, the proposed Area Plan would not conflict with the General Plan (adopted for the purpose of avoiding or mitigating an environmental effect). A less than significant impact would occur and this topic will not be further analyzed in the EIR.

City of Lake Forest Zoning Ordinance

The City's Zoning Ordinance is contained within Title 9, *Planning and Zoning*, of the Municipal Code. The Zoning Ordinance defines an area plan as "containing relatively more detailed information and addresses a relatively smaller area of real property than a feature plan…an area plan for planned community or specific plan may have less restrictive site development standards if allowed by the enabling ordinance." The Area Plan, upon adoption, in addition to the Development Agreement, would serve as implementation tools for the General Plan as well as reflect the project site's existing zoning regulations.

The project site is zoned Multifamily Dwellings with a Planned Development Combining District. The Area Plan would comply with the current zoning designations for the site, as the proposed Area Plan would allow for the development of residential uses combined with park and recreational areas, a Civic Center, and would maintain the existing public facilities associated with the IRWD site. Also, the Area Plan contains circulation standards, design guidelines, and development regulations that would ensure compatibility with surrounding uses. Thus, upon approval of the proposed Area Plan, the project would be consistent with the Zoning Ordinance. The Area Plan would not conflict with the Zoning Ordinance (as adopted for the purpose of avoiding or mitigating an environmental effect) and a less than significant impact would occur. This topic will not be further analyzed in the EIR.

Tentative Tract Map No. 17331

Pursuant to the Area Plan, the maximum permitted residential density per planning area shall not exceed 25 DU/AC. For the proposed project, the maximum allowable residential development is 608 DU. For the project alternative, the maximum allowable residential development is 833 DU. Table 2-1 establishes the maximum permitted residential density per planning area and Table 2-2 outlines the Tentative Tract Maps proposed residential uses. A review of Tables 2-1 and 2-2 indicates, for both the proposed project and the project alternative, the proposed Tentative Tract Map would be consistent with the Area Plan's density restrictions.

Therefore, as the proposed Tentative Tract Map would be consistent with the Area Plan and the Area Plan is consistent with both the General Plan and Zoning Ordinance, the project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Impacts are less than significant and this topic area will not be further analyzed in the EIR.

4.10(c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Less Than Significant Impact With Mitigation Incorporated. Based on the City's *CEQA Significance Thresholds Guide*, a project would normally have a significant land use impact if it would:

- 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.

As discussed in Response 4.4(f), the project site is located within the NCCP/HCP and within an NCCP/HCP Impact Area. Coastal sage scrub and the California gnatcatcher occur on the project site. As the project would disturb these species, the NCCP/HCP would require an in-lieu fee payment (Mitigation Measure BIO-2). Thus, following compliance with the conditions of the NCCP/HCP and Implementation Agreement (Mitigation Measure BIO-2), all direct, indirect, and cumulative impacts to the covered habitats and Identified Species resulting from development within designated Impact Areas, the project would be considered fully mitigated. Therefore, with implementation of Mitigation Measure BIO-2, the project would not conflict with the provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan. This topic will not be further analyzed in the EIR.

4.11 MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✓

Impact Analysis

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

No Impact. There are no mineral resources present within the project site. Therefore, project implementation would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. No impact would occur and this topic will not be further analyzed in the EIR.

4.11(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. There are no locally-important mineral resource recovery sites present within the project site. The nearest mineral resource area is located approximately 1.25 miles east of the project site, as delineated on Figure RR-5 of the General Plan. Therefore, no impact would occur and this topic will not be further analyzed in the EIR.

4.12 NOISE

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		✓		
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		✓		
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		✓		
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		✓		
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓

Based on the City's *CEQA Significance Thresholds Guide*, a proposed project would normally have a significant impact if:

- Project traffic will cause a noise level increase of 3dB or more on a roadway segment adjacent to a noise sensitive land use. Noise sensitive land uses include the following: residential (single-family, multi-family, mobile home); hotels; motels; nursing homes; hospitals; parks, playgrounds and recreation areas; and schools.

- The resulting "future with project" noise level exceeds the noise standard for sensitive land uses as identified in the City of Lake Forest General Plan (refer to Table 4.12-2, *Interior and Exterior Noise Standards*).

- Exceed the stationary source noise criteria for the City of Lake Forest as specified by the Exterior noise standards set fourth in the Noise Control Chapter of the Lake Forest Municipal Code.

LSA Associates, Inc. (LSA) prepared a *Noise Impact Analysis* (NIA), dated December 2009, for the project; refer to Appendix F, *Noise Impact Analysis*. The following analysis is based on the NIA.

EXISTING NOISE ENVIRONMENT

The primary existing noise sources in the project area consist of commercial/industrial uses and transportation facilities. Traffic on Biscayne Bay Drive, Indian Ocean Drive, and other local streets is the main source contributing to the background noise. Vehicles and operations

associated with adjacent commercial/warehouse uses also contribute to the ambient noise levels in the project vicinity. Occasional aircraft overflight generates noise higher than the other more steady background noise sources.

Based on a field survey conducted by LSA on November 30, 2009, the ambient noise levels vary from 42 to 50 dBA in the residential neighborhoods to the east and south of the project site, and from 43 to 52 dBA in the commercial/warehousing areas to the north. However, at the rear parking lot near Advanced Surfaces, Inc., located at 25722 Commercentre Drive, noise from dust collector and wood sawing associated with the countertop manufacturing process registered in the range of 62 to 64 dBA at a distance of 20 feet from the door. An air compressor at the next-door DVP Exhaust and Automotive Repair Shop also produced noise levels ranging from 60 to 64 dBA intermittently. These doors are approximately 50 feet from the project boundary. Further to the southeast, there are 11 dock doors at the 25800 Commercentre Drive building (approximately 200 feet from the northeastern project boundary) and 38 dock doors associated with two industrial buildings adjacent to Indian Ocean Drive, but no truck loading/unloading activity occurred during the field survey. The industrial facility on the east side of Indian Ocean Drive has no loading docks near the project boundary.

SENSITIVE RECEPTORS

Sensitive receptors existing in the project vicinity include residences to the east (Serrano Highlands Apartments and other multi-family residential), west (Emerald Court Apartments and single-family residential), and south (single-family residential). Also, an institutional use (Fulbright Montessori Academy) is located to the north of the project site, and Tamarisk Park is located to the west.

CITY OF LAKE FOREST NOISE STANDARDS

General Plan

Applicable policies and standards governing environmental noise in the City are set forth in the Noise Element of the General Plan. The Noise Element quantifies the community noise environment in terms of noise exposure contours for both near- and long-term levels of growth and traffic activity. Table 4.12-1, *Noise/Land Use Compatibility Matrix*, lists State compatibility guidelines for various land uses.

Table 4.12-2, *Interior and Exterior Noise Standards*, presents the City's interior and exterior noise standards for assessing the compatibility of land uses with the noise environment. This matrix may be used to determine whether a certain type of land use is appropriate in a particular CNEL zone. The City requires that all outdoor living areas associated with new residential uses be attenuated to less than 65 dBA CNEL. All new residential units and noise-sensitive land uses are required to have an interior noise level in living areas no greater than 45 dBA CNEL.

Table 4.12-1
Noise/Land Use Compatibility Matrix

Land Use Category	50 dBA	55 dBA	60 dBA	65 dBA	70 dBA	75 dBA	80 dBA
Residential – Single-Family, Multi-Family, Duplex	A	A	B	B	C	C	D
Residential – Mobile Homes	A	A	A	B	C	C	D
Transient Lodging – Motels, Hotels	A	A	A	B	B	C	D
Schools, Libraries, Churches, Hospitals, Nursing/ Convalescent Homes, Preschools, Day Care Centers (1)[2]	A	A	A	B	C	C	D
Auditoriums, Concert Halls, Amphitheaters, Meeting Halls	B	B	B	C	D	D	D
Sports Areas, Outdoor Spectator Sports, Amusement Parks	A	A	A	A	B	B	D
Playgrounds, Neighborhood Parks	A	A	A	A	B	C	D
Golf Courses, Riding Stables, Cemeteries	A	A	A	A	A	B	C
Office and Professional Buildings	A	A	A	A	B	B	C
Commercial Retail, Banks, Restaurants, Theaters	A	A	A	A	A	B	B
Industrial, Manufacturing, Utilities, Wholesale, Service Stations	A	A	A	A	A	B	B
Agriculture	A	A	A	A	A	A	A

KEY:

Zone A. Normally Acceptable—Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Zone B. Conditionally Acceptable—New construction or development should be undertaken only after detailed analysis of noise reduction requirement is made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air-conditioning, will normally suffice.

Zone C. Normally Unacceptable—New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

Zone D. Clearly Unacceptable—New construction should generally not be undertaken.

dBA = A-weighted decibels

Source: LSA Associates, Inc., *Noise Impact Analysis – Serrano Summit*, December 2009.

Table 4.12-2
Interior and Exterior Noise Standards

Land Use	Noise Standards	
	Interior[1]	Exterior
Residential: Single-Family, Multifamily, Duplex, Mobile Home	45 dBA CNEL	65 dBA CNEL[2]
Residential: Transient Lodging, Hotels, Motels, Nursing Homes, Hospitals	45 dBA CNEL	65 dBA CNEL
Private Offices, Church Sanctuaries, Libraries, Board Rooms, Conference Rooms, Theaters, Auditoriums, Concert Halls, Meeting Halls, etc.	45 dBA $L_{eq}(12)$[3]	—
Schools	45 dBA $L_{eq}(12)$	67 dBA $L_{eq}(12)$[4]
General Offices, Reception, Clerical, etc.	50 dBA $L_{eq}(12)$	—
Bank Lobby, Retail Store, Restaurant, Typing Pool, etc.	55 dBA $L_{eq}(12)$	—
Manufacturing, Kitchen, Warehousing, etc.	65 dBA $L_{eq}(12)$	—
Park, Playgrounds	—	65 dBA CNEL
Golf Courses, Outdoor Spectator Sports, Amusement Parks	—	70 dBA CNEL

[1] Noise standard with windows closed. Mechanical ventilation shall be provided per Uniform Building Code requirements to provide a habitable environment. Indoor environment excludes bathrooms, toilets, closets, and corridors.
[2] Outdoor environment limited to rear yard of single-family homes, multifamily patios and balconies (with a depth of 6 feet or more), and common recreation areas.
[3] Religious institutions (churches, temples, and other places of worship) of a small size (occupancy of 100 persons or less) may occupy existing buildings within areas of exterior noise levels ranging from 65 to 75 dBA CNEL without providing additional noise insulation for the building.
[4] Outdoor environment limited to playground areas, picnic areas, and other areas of frequent human use.
CNEL = Community Noise Equivalent Level.
dBA = A-weighted decibels.
$L_{eq}(12)$: The A-weighted equivalent sound level averaged over a 12-hour period (usually the hours of operation).
Source: LSA Associates, Inc., *Noise Impact Analysis – Serrano Summit*, December 2009.

Municipal Code

The City's Municipal Code, Chapter 11.16, *Noise Control*, specifies that construction activities are exempt from the provisions in the Noise Control Ordinance if they are conducted between the hours of 7:00 AM and 8:00 PM Monday through Saturday, and do not occur on Sundays and Federal holidays.

The Noise Control Ordinance identifies that maximum permissible exterior ambient noise level for residential uses shall be no greater than 55 dBA between 7:00 AM and 10:00 PM and no greater than 50 dBA between 10:00 PM and 7:00 AM. Maximum permissible interior ambient noise level for residential uses shall be no greater than 55 dBA between 7:00 AM and 10:00 PM and no greater than 45 dBA between 10:00 PM and 7:00 AM.

The permitted exterior ambient noise level shall not be exceeded for more than 30 minutes in any hour. The exterior ambient noise level plus 5 dBA shall not be exceeded for a cumulative period of more than 15 minutes in any hour; or the exterior ambient noise level plus 10 dBA shall not be exceeded for a cumulative period of more than 5 minutes in any hour; or the exterior ambient noise level plus 15 dBA shall not be exceeded for more than 1 minute in any hour; or the exterior ambient noise level plus 20 dBA shall not be exceeded for any period of time (i.e., 75 and 70 dBA L_{max} during daytime and nighttime, respectively). If the ambient noise

level exceeds any of the first four noise limit categories above, the cumulative period applicable to such category shall be increased to reflect such ambient noise level. If the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under such category shall be increased to reflect the maximum ambient noise level.

The permitted interior ambient noise level shall not be exceeded for more than five minutes in any hour; or the interior ambient noise level plus 5 dBA shall not be exceeded for a cumulative period of more than one minute in any hour; or the interior ambient noise level plus 10 dBA shall not be exceeded for any period of time (i.e., 65 and 55 dBA L_{max} during daytime and nighttime, respectively). If the ambient noise level exceeds either of the first two noise limit categories above, the cumulative period applicable to such category shall be increased to reflect such ambient noise level. If the ambient noise level exceeds the third noise limit category, the maximum allowable noise level under such category shall be increased to reflect the maximum ambient noise level.

Impact Analysis

4.12(a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact With Mitigation Incorporated. Project construction and operation would result in both short-term and long-term noise impacts. Short-term impacts would occur as a result of construction activities. Long-term noise impacts would be associated with increased vehicular traffic to and from the project site, outdoor activities, deliveries, and stationary mechanical equipment on-site.

Construction-Related Impacts

Construction noise impacts would be associated with excavation, grading, and building activities. Construction-related noise levels would be higher than existing ambient noise levels in the project area, but would cease upon project completion.

Two types of noise impacts could occur during the construction of the project: mobile; and stationary source impacts. First, construction worker trips and the transport of construction equipment and materials to the site for the project would incrementally increase noise levels on access roads leading to the site. Although there would be a relatively high single event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 feet would generate up to a maximum of 87 dBA), the effect on long term (hourly or daily) ambient noise levels would be minimal. Therefore, short-term construction-related noise impacts associated with worker commute and equipment transport to the project site would be less than significant.

The second type of noise impact is related to noise generated during excavation, grading, and building construction on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment, and consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site, and therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and

patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 4.12-3, *Typical Construction Equipment Noise Levels*, lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

Table 4.12-3
Typical Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81 to 96	93
Rock Drills	83 to 99	96
Jack Hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

dBA = A-weighted decibels
ft-lb/blow = foot-pound per blow

Source: LSA Associates, Inc., *Noise Impact Analysis – Serrano Summit*, December 2009.

Typical noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the construction equipment capable of producing the loudest noise is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three or four minutes at lower power settings.

Construction of the project is expected to require the use of earthmovers, bulldozers, and water and pickup trucks on the project site. Based on the information in Table 4.12-3, the maximum noise level generated by each scraper on the project site is assumed to be 87 dBA L_{max} at 50 feet from the scraper. Each bulldozer would also generate 85 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some

distance from the other equipment, the worst-case combined noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area.

Existing residences to the south of the project site are located near Lot 17 (the location of the proposed passive park). Lot 17 is not proposed to be graded, therefore, residents to the south would not be exposed to high construction noise. The nearest graded area would be greater than 700 feet from these residences. However, there are existing residences located approximately 100 feet to the west of the project site with six dwelling units in two buildings. These residences may be exposed to construction noise up to 85 dBA L_{max} intermittently during project construction. Existing residences to the east are located approximately 315 feet from the nearest active construction area. These residences would experience construction noise levels of approximately 76 dBA L_{max} intermittently during construction.

Future residents would also be exposed to on-site construction-related noise impacts as the project builds out from Phase II through Phase IV. Potential construction noise impacts on residents located within Phase I would depend on the schedule and activities for Phase II through IV construction. However, these impacts would generally be similar to construction noise impacts from Phase I to adjacent off-site residences, as described above.

The General Plan does not specify standards for short-term construction noise. The City's Municipal Code, Chapter 11.16, *Noise Control*, specifies that construction activities are exempt from the provisions in the Noise Control Ordinance if they are conducted between the hours of 7:00 AM and 8:00 PM Monday through Saturday, and do not occur on Sundays and Federal holidays. Construction noise impacts would be reduced with implementation of Mitigation Measure NOI-1, which restricts construction activities to the daytime hours outlined in the Municipal Code. With implementation of Mitigation Measure NOI-1, the project would only conduct construction activities between the hours of 7:00 AM and 8:00 PM Monday through Saturday, and no construction activities would occur on Sundays and Federal holidays. Construction noise impacts would be further reduced with implementation of Mitigation Measure NOI-1, which also requires properly tuned equipment and siting of equipment away from sensitive receptors. Although, the project would result in the exposure of persons to or generation of noise levels in excess of Noise Ordinance standards, the proposed construction activities would be exempt and would be minimized with implementation of the recommended mitigation. Impacts would be less than significant and this topic will not be further analyzed in the EIR.

Long-Term Traffic Noise Impacts

Significant impacts would result if project traffic results in a noise level increase of 3dB or more on a roadway segment adjacent to a noise sensitive land use. Project-related long-term vehicular trip increases are anticipated to be minimal when distributed to adjacent street segments. Adjacent street segments would include Indian Ocean Drive, Biscayne Bay Drive, Commercentre Drive, and Bake Parkway. No noise sensitive land uses are located adjacent to these existing roadway segments. Also, the proposed on-site residential uses are not directly adjacent to any major arterial.

Significant impacts would also result if "future with project" noise levels exceed the noise standard for sensitive land uses as identified in the General Plan; refer to Table 4.12-2, above. The City requires that all outdoor living areas associated with new residential uses be

attenuated to less than 65 dBA CNEL. All new residential units and noise-sensitive land uses are required to have an interior noise level in living areas no greater than 45 dBA CNEL. A doubling of traffic volumes is generally required for a 3 dB increase in traffic noise.

Proposed Project. Table 4.12-4, *Traffic Noise Levels Along Roadways – Proposed Project*, shows the future traffic noise levels as a result of the proposed project. The proposed on-site residential uses would not be exposed to traffic noise levels exceeding the exterior noise standard of 65 dBA CNEL and would not exceed the interior noise standard of 45 dBA CNEL from exterior noise sources. Further, the proposed on-site Civic Center facilities would not be exposed to traffic noise exceeding the 50 dBA $L_{eq}(12)$ exterior noise standard for office use. It is further noted that the trips would be distributed along roadways with relatively high volumes (i.e., Commercentre Drive and Bake Parkway). Furthermore, traffic volumes would not be doubled along any roadways in the study area; therefore, there would not be the potential for a 3 dB noise increase. Impacts would be less than significant for the proposed project and this topic will not be further analyzed in the EIR.

Table 4.12-4
Traffic Noise Levels Along Roadways – Proposed Project

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Private Street south of Biscayne Bay Drive/B Street roundabout	1,200	< 50	< 50	< 50	57.7
B Street between Biscayne Bay Drive and C Street	1,300	< 50	< 50	< 50	58.0
B Street between C Street and Indian Ocean Drive	900	< 50	< 50	< 50	56.4
Indian Ocean Drive north of B Street	3,800	< 50	< 50	84	62.7
Indian Ocean Drive south of B Street	900	< 50	< 50	< 50	56.4
C Street north of B Street	600	< 50	< 50	< 50	54.7
C Street south of B Street	200	< 50	< 50	< 50	49.9

Notes:
ADT = Average Daily Traffic
CNEL = community noise equivalent level
dBA = A-weighted decibels

Source: LSA Associates, Inc., *Noise Impact Analysis – Serrano Summit*, December 2009.

Project Alternative. The project alternative proposes residential uses on Lot 13 instead of the Civic Center. According to the project's Traffic Study, the project alternative would generate fewer trips than the proposed project. Therefore, the proposed on-site residential uses would be exposed to lower traffic noise levels than that of the proposed project (presented in Table 4.12-4). As traffic noise levels associated with the proposed project are less than significant, it can be reasonably inferred that traffic noise levels associated with the project alternative would also be less than significant due to the reduced amount of generated trips. Impacts would be less than significant for the project alternative and this topic will not be further analyzed in the EIR.

Long-Term Off-Site Stationary-Source Impacts

The project would result in potentially significant impacts if stationary-source noise exceeds the exterior noise standards set fourth in the Noise Control Chapter of the Municipal Code. The Noise Control Ordinance identifies that maximum permissible exterior ambient noise level for residential uses shall be no greater than 55 dBA between 7:00 AM and 10:00 PM and no greater than 50 dBA between 10:00 PM and 7:00 AM. Maximum permissible interior ambient noise level for residential uses shall be no greater than 55 dBA between 7:00 AM and 10:00 PM and no greater than 45 dBA between 10:00 PM and 7:00 AM.

The potential long-term stationary-source noise impacts would be associated primarily with off-site stationary sources from the adjacent office/warehouse facilities to the north. The existing office/warehouse facilities adjacent to the project site would generate noise from vehicle and truck movement, loading/unloading activities, and manufacturing operations. These activities are potential point sources of noise that could affect noise sensitive receptors proposed on the project site. Potentially significant noise impacts would occur from these off-site commercial/warehouse operations if on-site noise sensitive uses are proposed within the impact zones of these off-site noise-generating activities. Other off-site, noise-producing activities may include outdoor air-conditioning units, parking, traffic, and pedestrian activity within the parking lot of the commercial/warehousing uses. Most of these events are intermittent in nature and typically of a very short duration.

As noise spreads from a source it loses energy. Therefore, the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a six dBA reduction in the noise level for each doubling of distance from a single point source of noise, such as an idling truck, to the receptor of concern.

Manufacturing Operations

The ambient noise survey conducted by LSA revealed that, at the rear parking lot near Advanced Surfaces Inc. (located at 25722 Commercentre Drive), noise from the dust collector and wood sawing registered in the range of 62 to 64 dBA at a distance of 20 feet from the door. The air compressor at the next-door DVP Exhaust and Automotive Repair Shop also produced noise levels ranging from 60 to 62 dBA intermittently. These doors are approximately 50 feet from the project boundary. The project site is generally lower in elevation compared to the commercial/industrial area to the north. Further to the southeast, there are 11 dock doors at the 25800 Commercentre Drive building (approximately 200 feet from the project boundary) and 38 dock doors associated with two industrial buildings adjacent to Indian Ocean Drive. The industrial facility on the east side of Indian Ocean Drive has no loading docks near the project boundary.

The project site is generally higher in elevation at the northern portion of the site. The project would be graded so that it is approximately 12 feet higher than the adjacent industrial uses near Biscayne Bay Drive in the northwest corner. However, the adjacent industrial use site rises in elevation to approximately five feet above the project site, and gradually descends and would be level with the project site near Indian Ocean Drive. As proposed per Exhibit 9-19, Fence and Wall Plan, of the Area Plan, the project would construct a six-foot-high wall consisting of

concrete masonry units (CMU) along the project's northern boundary between Biscayne Bay Drive and Indian Ocean Drive.

Manufacturing operations and goods movement inside the existing warehouse to the north of the project site would result in a maximum noise reading of 78 dBA L_{max} at 50 feet. This noise level is further reduced by the building itself, depending on the receptor location. The ambient noise field survey indicated a range of noise levels (62 to 64 dBA) at a location 20 feet from the countertop manufacturing facility to the north of the project site, from dust collector and wood sawing activities inside the building. At a distance of 50 feet from this facility near the project boundary, the noise would be reduced to 58 dBA or less. Based on the above discussion, noise associated with these operations would be reduced by distance divergence, elevation difference, and the proposed six-foot-high CMU wall along the project's northern boundary. These noise-attenuating features would reduce noise levels to below 55 dBA L_{max} at the ground level of the nearest residences proposed on site. This range of maximum noise levels is lower than the daytime exterior noise standards of 75 dBA L_{max} and the 65 dBA L_{max} nighttime standard. Based on the NIA, it is possible that operations associated with this manufacturing facility to the north would last more than 30 minutes in an hour, making it necessary to meet the most stringent noise standards applicable to the proposed on-site residences. These noise standards include the following:

- The exterior ambient noise level plus 5 dBA shall not be exceeded for a cumulative period of more than 15 minutes in any hour; or

- The exterior ambient noise level plus 10 dBA shall not be exceeded for a cumulative period of more than 5 minutes in any hour; or

- The exterior ambient noise level plus 15 dBA shall not be exceeded for more than 1 minute in any hour; or

- The exterior ambient noise level plus 20 dBA shall not be exceeded for any period of time (i.e., 75 and 70 dBA L_{max} during daytime and nighttime, respectively).

If the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to such category must be increased to reflect such ambient noise level. If the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under such category must be increased to reflect the maximum ambient noise level.

Noise associated with manufacturing activities inside the existing industrial buildings to the north would not result in noise levels exceeding the City's exterior noise standard of 55 dBA L_{50} during daytime hours at the nearest proposed residences. Thus, noise associated with the adjacent manufacturing activities would not exceed the exterior noise standards set fourth in the Noise Control Chapter of the Municipal Code and this topic will not be further discussed in the EIR.

Truck Delivery and Loading/Unloading

The existing commercial uses to the north have loading/unloading areas located approximately 50 to 100 feet from the project boundary. Noise associated with loading/unloading activities at these commercial/warehouse and office uses would potentially affect on-site residences if they are located near the project boundary.

Delivery trucks (including Federal Express, United Parcel Service, and other trucks) and loading/unloading (including forklift) operations for the existing commercial/warehousing uses to the north would result in maximum noise levels similar to loading and unloading activities for other projects, which generate a noise level of 75 dBA L_{max} at 50 feet (used in this analysis). Based on the above discussion, loading/unloading noise would be reduced by the combination of distance divergence, elevation difference, and the six-foot-high CMU wall proposed by the Area Plan along the project's northern boundary. These noise-attenuating features would reduce noise levels to below 55 dBA L_{max} at ground level of the nearest on-site location for residential uses for both the proposed project and project alternative. This range of maximum noise levels is lower than the exterior daytime noise standards of 75 dBA L_{max} (7:00 AM to 10:00 PM) and the 65 dBA L_{max} nighttime standard (10:00 PM to 7:00 AM.). Although typical truck unloading processes take an average of 15 to 20 minutes, this maximum noise level occurs in a much shorter period of time. However, due to the multiple dock doors associated with these buildings, it is possible that loading/unloading activities would be continuous for more than 30 minutes in an hour. Because the City's noise standard of 55 dBA (that should not be exceeded for more than 30 minutes in any hour during the daytime hours) would not be violated, impacts would be less than significant and no mitigation measures are required. There would be no nighttime delivery at these commercial/industrial uses to the west or north of the project site. Noise associated with the adjacent truck delivery and loading/unloading activities would not exceed the exterior noise standards at the proposed on-site residences. This topic will not be further discussed in the EIR.

Parking Lot Activity

Representative parking activities, such as employees conversing and doors slamming, would generate approximately 60 dBA L_{max} at a distance of 50 feet. This noise level is much lower than that of the off-site truck delivery and loading/unloading activities. With the noise attenuation from the distance divergence, noise in the parking lot would be attenuated to below 54 dBA L_{max} and is not anticipated to be a significant noise issue with respect to on-site residences or those to the west of the project site. Thus, noise associated with the parking lot activities would not exceed the exterior noise standards set fourth in the Noise Control Chapter of the Municipal Code and this topic will not be further discussed in the EIR.

Outdoor Air-Conditioning Units

There is an existing outdoor air-conditioning unit adjacent to the project site generating approximately 65 dBA L_{max} at 80 feet. At 100 feet, the noise level reduces to 63 dBA L_{max}. This level of noise is lower than that of the truck delivery and loading/unloading activities. With the noise attenuation effect from the elevation difference and the proposed six-foot-high CMU wall, noise from the outdoor air-conditioning unit would be attenuated to below 50 dBA L_{max} and is not anticipated to be a significant noise issue with respect to residences on the project site. Thus, noise associated with the off-site outdoor air-conditioning units would not exceed the exterior noise standards set fourth in the Noise Control Chapter of the Municipal Code and this topic will not be further discussed in the EIR.

Interior Noise Standard

The typical maximum allowable interior noise levels for residential uses are 45 dBA between 10:00 PM and 7:00 AM and 50 dBA between 7:00 AM and 10:00 PM per the Noise Control Chapter of the Municipal Code. Typical sound level reduction of buildings in a warm climate such as Southern California is 12 dBA with windows opened and 24 dBA with windows closed. Interior noise levels at the residences nearest the commercial/warehousing uses, attributable to loading/unloading activities from the off-site loading areas, would be reduced to 43 dBA L_{max} with windows opened, and to 31 dBA L_{max} with windows closed. Standard building construction for residential structures would be sufficient to meet the interior noise standard. Thus, noise associated with the off-site commercial/warehousing uses would not exceed the interior noise standards set fourth in the Noise Control Chapter of the Municipal Code and this topic will not be further discussed in the EIR.

Civic Center

The proposed project involves the development of a Civic Center on Lot 13, which is located in the eastern portion of the project site, separated from the proposed residential development by Indian Ocean Drive as well as a significant grade difference. Civic Center design guidelines would ensure proper site planning and building orientation, such that noise associated with typical Civic Center operations (e.g., outdoor air-conditioning unit, delivery truck traffic, and parking lot noise) would be attenuated by distance divergence and shielded by buildings/structures proposed as part of the Civic Center facilities. Thus, noise associated with the proposed Civic Center would not exceed the exterior and interior noise standards set fourth in the Noise Control Chapter of the Municipal Code and this topic will not be further discussed in the EIR.

The project alternative involves the development of residential uses on Lot 13. Any noise sources associated with residential uses on Lot 13 would be similar to those within other proposed residential areas of the project site. Thus, noise associated with proposed residential uses of the project alternative would not exceed the exterior and interior noise standards set fourth in the Noise Control Chapter of the Municipal Code and this topic will not be further discussed in the EIR.

Mitigation Measures:

NOI-1 Prior to grading permit issuance, the construction contractor shall demonstrate, to the satisfaction of the City of Lake Forest Development Services Department, the following:

- Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices.

- Construction noise reduction methods such as shutting off idling equipment, maximizing the distance between construction equipment staging areas and nearby occupied uses, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.

- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receptors.

- The construction contractor shall submit a haul plan to the City, and the City shall ensure the planned haul truck routes avoid residential areas to the extent feasible.

- All construction entrances shall clearly post construction hours, allowable workdays, and the phone number of the job superintendent. This will allow surrounding owners to contact the job superintendent with concerns. If the contractor receives a noise-related complaint, appropriate corrective actions shall be implemented and a report taken indicating the action with a copy of the report provided to the reporting party upon request.

- The construction contractor shall change the timing and/or sequence of the noisiest construction operations to avoid sensitive times of the day.

- Construction activities shall be prohibited between 8:00 PM and 7:00 AM the following day from Monday through Saturday, and no construction shall be permitted on Sundays and Federal holidays. Construction noise during the allowed construction time periods shall be exempt from the noise level provisions in the Noise Control Ordinance.

(Source: as modified from OSA PEIR Mitigation Measure MM 3.10-1)

4.12(b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact With Mitigation Incorporated. Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of a construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 25 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. Construction activities that result under the project may have the potential to generate low levels of groundborne vibration. Table 4.12-5, *Typical Vibration Levels*

For Construction Equipment, identifies various vibration velocity levels for types of construction equipment that would operate within the project site during construction.

Similar to noise, groundborne vibration would attenuate at a rate of approximately 6 VdB per doubling of distance. The groundborne vibration generated during construction activities would primarily impact existing sensitive uses that are located adjacent to or within the vicinity of specific projects. Based upon the information provided in Table 4.12-5, vibration levels could reach up to 87 VdB for typical construction activities (and up to 104 VdB if pile driving activities were to occur) at sensitive uses located within 25 feet of construction. For sensitive uses that are located at or within 25 feet of potential project construction sites, sensitive receptors at these locations may experience vibration levels during construction activities that exceed the FTA's vibration impact threshold of 85 VdB for human annoyance. As the project would occur in multiple phases, the potential exists for sensitive receptors within the project site to experience groundbourne vibration impacts. However, pursuant to Mitigation Measure NOI-2, should future construction activities take place within 25 feet of an occupied structure, a project-specific vibration impact analysis shall be conducted. Per the findings of the analysis, contract specifications would be included in construction documents for the project that would reduce these impacts to a less than significant level.

Table 4.12-5
Typical Vibration Levels For Construction Equipment

Equipment	Approximate ground velocity in decibels at 25 feet (inches/second)	Approximate ground velocity in decibels at 50 feet (inches/second)
Pile Driver (impact)	104	98
Large Bulldozer	87	81
Loaded Trucks	86	80
Jackhammer	79	73
Small Bulldozer	58	52
Notes: Root mean square amplitude ground velocity in decibels (VdB) referenced to 1 micro-inch/second.		
Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006.		

Implementation of Mitigation Measure NOI-2 would reduce the generation and/or exposure of persons or structures to excessive groundborne vibration. Resultant impacts would be less than significant after implementation of NOI-2 and this topic will not be further analyzed in the EIR.

Mitigation Measures:

NOI-2 The project applicant shall require by contract specifications that construction staging areas and earthmoving equipment shall be located as far away from vibration and noise sensitive sites as possible. Should construction activities take place within 25 feet of an occupied structure, a project specific vibration impact analysis shall be conducted. The vibration impact analysis shall provide measures for minimizing vibration impacts that exceed 85 VdB. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City

prior to issuance of a grading permit. (Source: as modified from OSA PEIR Mitigation Measure MM 3.10-1)

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

Less Than Significant Impact With Mitigation Incorporated. Refer to Response 4.12(a).

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

Less Than Significant Impact With Mitigation Incorporated. Refer to Response 4.12(a).

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

No Impact. There are no public or private use airports located within the City of Lake Forest. John Wayne International Airport is the nearest public use airport to the project site, located approximately 10 miles to the west. Therefore, as the project site is not located within two miles of a public or private use airport, the project would not expose people residing or working in the project area to excessive noise levels. No impact would result and this topic will not be further analyzed in the EIR.

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

No Impact. There is a privately-operated heliport at the Oakley, Inc. headquarters at 1 Icon, in Lake Forest, approximately 1.5 miles from the project site. Due to the distance between the heliport and the project site, helicopters departing from and arriving at the Oakley heliport would not interfere with the proposed residences. Therefore, project implementation would not expose people to excessive noise levels.

4.13 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			✓	
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

Impact Analysis

4.13(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)?

Less Than Significant Impact. A project could induce 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). The OSA PEIR assumed a maximum of 833 DU on Site 3 (the project site). Based on 2.91 persons per household (as designated by the General Plan), the population growth associated with residential development on Site 3 would be approximately 2,424 persons. The OSA PEIR determined that the General Plan Amendment 2008-02 and Zone Changes 2008-01 to 2008-05 (which included the project site) would result in significant and unavoidable impacts pertaining to growth inducement and the City adopted a finding and statement of overriding considerations upon adoption of the OSA PEIR.[12] As indicated in Table 2-2, the proposed project and project alternative involve both residential and non-residential development. The project's proposed residential development would induce direct growth in the City's population. Additionally, employment generated by the proposed non-residential development could result in direct growth in the City's population, as the potential exists that future employees (and their families) would choose to relocate to the City.

Proposed Project. The proposed project includes the development of up to 608 residential units. Based on 2.91 persons per household (as designated by the General Plan), the population growth associated with the proposed project's residential development would be approximately 1,770 persons. This represents an approximate 2.2 percent increase over the City's estimated January 1, 2010 population of 78,720.[13]

[12] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.11-10.

[13] State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California*, May 2010.

The proposed project also involves two non-residential employment-generating land uses: a Civic Center on Lot 13 and the existing IRWD facilities on Lots 18 and 19. The proposed Civic Center is not anticipated to result in substantial population growth over existing conditions, as it would be a relocated facility that is currently operating approximately 500 feet northwest of the project site. The existing IRWD facilities would be maintained and are not anticipated to result in population growth.

Project Alternative. The project alternative includes the development of up to 833 residential units. Based on 2.91 persons per household, as assumed by the OSA PEIR, the population growth associated with the project alternative's residential development would be approximately 2,424 persons. This represents an approximate 3.1 percent increase over the City's estimated January 1, 2010 population of 78,720. The project alternative involves only one non-residential employment-generating land use- the existing IRWD facilities on Lots 18 and 19. The existing IRWD facilities would be maintained and are not anticipated to result in population growth.

Conclusion. As previously noted, the OSA PEIR forecasts the project site's population would total approximately 2,424 persons. Under the proposed project, the project site's population would total approximately 1,770 persons. Under the project alternative, the project site's population would total approximately 2,424 persons. Population growth within the project site was considered in the OSA PEIR, since its forecasts were based on a maximum of 833 DU. Given the proposed project and project alternative would occur in accordance with the OSA PEIR's anticipated development, project implementation would be consistent with the OSA PEIR growth forecasts and would result in no greater impacts associated with population growth than previously analyzed. Therefore, as the project would not induce substantial population growth in the City, and it is anticipated that the City's infrastructure could accommodate additional growth, a less than significant impact would occur. This topic will not be further analyzed in the EIR.

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

No Impact. Currently, the project site contains only a water treatment facility. Upon project implementation, the IRWD would remain on-site. No housing units are currently present at the project site. Therefore, project implementation would not displace housing, necessitating the construction of replacement housing elsewhere. No impact would result and this topic will not be further analyzed in the EIR.

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

No Impact. The proposed project involves development of new residential uses, associated park and recreational areas, a new Civic Center, and the maintenance of existing public facilities. The project alternative involves development of new residential uses, associated park and recreational areas, and the maintenance of existing public facilities. Project implementation would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. No impacts would result and this topic will not be further analyzed in the EIR.

4.14 PUBLIC SERVICES

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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:				
1) Fire protection?		✓		
2) Police protection?			✓	
3) Schools?			✓	
4) Parks?			✓	
5) Other public facilities?			✓	

Impact Analysis

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:

4.14(a)(1) Fire protection?

Less Than Significant Impact With Mitigation Incorporated. The Orange County Fire Authority (OCFA) provides structural fire protection, emergency medical and rescue services, hazardous inspections and response, and public education activities to the project area. The nearest fire station to the project site is Fire Station (FS) 38, located at 26 Parker in the City of Irvine (approximately 1.3 miles west of the project site). FS 38 is staffed with five firefighters, two of which are paramedics. FS 38 equipment includes one engine and one medic van.

As stated in the OSA PEIR, emergency services may be required at the project site during construction activities. The impact to emergency services during construction would be short-term in nature, and impacts would be considered less than significant.

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. Mitigation Measure PUB-1 would require all developers to enter into a Secured Fire Protection Agreement with OCFA, which would ensure the availability of adequate fire protection services. As required by the proposed Area Plan, developers would pay applicable impact fees for fire protection services pursuant to the terms contained in the Development Agreement.

The Area Plan also includes a fuel modification plan. 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 on-going 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 compliance with recommended Mitigation Measure PUB-1 and the Area Plan regulations regarding payment of impact fees and the fuel modification plan, project implementation would not cause the deterioration of fire services and, as the project would be consistent with the existing General Plan and Zoning Code, the project would not result in the need for expansion of physical public service facilities. Impacts to fire protection services would be reduced to less than significant levels and this topic will not be further discussed in the EIR.

Mitigation Measures:

PUB-1 Prior to approval of Tentative Tract Map No. 17331, the site developers shall enter into a Secured Fire Protection Agreement with OCFA that shall ensure an adequate level of service is maintained in the City. (Source: as modified from OSA PEIR Mitigation Measure MM 3.12-2)

4.14(a)(2) Police protection?

Less Than Significant Impact. Police services for the City are provided by contract with the Orange County Sherriff's Department (OCSD). OCSD is responsible for protecting citizens, enforcing laws, and preventing crime. The City and project area are currently served by the OCSD Community Policing Center located at 25550 Commercentre Drive (City Hall), approximately 400 feet north of the project site.

As stated in the OSA PEIR, emergency services may be required at the project site during construction activities. The Contractors/Property Owners would be responsible for providing on-site security services during construction. However, the OCSD would provide emergency services to the site during construction, should an emergency incident occur. The impact to emergency services during construction would be short-term in nature. 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. Short-term construction impacts are less than significant and this topic will not be further analyzed in the EIR.

Development of the project site could increase the demand for police protection services, which could cause a deterioration of police services within the service area. According to the OSA PEIR, there are no standard criteria for evaluating acceptable service levels. However, police staffing levels in the City are acceptable, if the reported response times are not above average for the area.[14] 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.

[14] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.12-10.

Adequate police protection would be addressed by payment of applicable impact fees for police/sheriff pursuant to the Tentative Tract Map's conditions of approval. Therefore, following compliance with the Tentative Tract Map's conditions of approval regarding the payment of impact fees for police protection services, the project would not result in the deterioration of police services and would not require the expansion of physical police service facilities. Impacts would be reduced to less than significant levels and this topic will not be further analyzed in the EIR.

4.14(a)(3) Schools?

Less Than Significant Impact. Saddleback Valley Unified School District (SVUSD) provides public education in the project area. There are currently 36 schools in SVUSD, including 27 elementary schools, four middle schools, four high schools, and one alternative high school; refer to OSA PEIR Table 3.12-2, *SVUSD Schools*. The OSA PEIR assumed a maximum of 833 DU on Site 3 (the project site); refer to OSA PEIR Table 2-5, *Project Summary*. Based on the student generation rates outlined in OSA PEIR Table 3.12-7, *Student Generation from the Proposed Project*, Site 3 would generate a total of 266 students, including 167 grades K–6 students, 32 grades 7-8 students, and 66 grades 9-12 students. The OSA PEIR determined that the General Plan Amendment 2008-02 and Zone Changes 2008-01 to 2008-05 (which included Site 3 (the project site)) would result in less than significant impacts to school facilities with mitigation incorporated.[15]

Proposed Project. The proposed project would include up to 608 residential units and would result in an increase in enrollment in the SVUSD. Utilizing the same student generation rates as the OSA PEIR, the proposed project would generate an additional 220 students; refer to Table 4.14-1, *Student Generation – Proposed Project*. Note that this analysis assumes a conservative housing type mix for the project up to 608 residential units; however, the exact housing types proposed are unknown at this time.

Table 4.14-1
Student Generation – Proposed Project

Housing Type	Number of Units	Student Generation Rate/Number of Students						
		K-6		7-8		9-12		Total
Detached	150	0.443	66	0.093	14	0.161	24	104
Attached	458	0.167	76	0.027	12	0.061	28	116
Total	***608***		***142***		***26***		***52***	***220***

Project Alternative. The project alternative would include up to 833 residential units, resulting in an increase in SVUSD enrollment. Utilizing the same student generation rates as the OSA PEIR, the project alternative would result in an additional 265 students; refer to Table 4.14-2, *Student Generation – Project Alternative*.

[15] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.12-12.

Table 4.14-2
Student Generation – Project Alternative

Housing Type	Number of Units	Student Generation Rate/Number of Students						
		K-6		7-8		9-12		Total
Detached	150	0.443	66	0.093	14	0.161	24	104
Attached	458	0.167	76	0.027	12	0.061	28	116
Apartments	225	0.109	25	0.027	6	0.061	14	45
Total	***608***		***167***		***32***		***66***	***265***

As stated in the OSA PEIR, the SVUSD is currently declining in enrollment. Enrollment is anticipated to continue to decline through at least 2015, even with the development of the OSA (which considers the project site). As required by the proposed Area Plan, developers would also be required to pay impact fees for schools pursuant to the terms contained in the School Mitigation Agreement. With the provision of impact fee payments, the project would not result in the deterioration of school services and would not require the expansion of physical school service facilities. Impacts would be reduced to less than significant levels and this topic will not be further analyzed in the EIR.

4.14(a)(4) Parks?

Less Than Significant Impact.

Proposed Project. Per the Development Agreement, the park allocation standard is 3.0 acres of parkland per 1,000 persons. As concluded in Response 4.13(b) above, the population growth associated with the proposed project would total approximately 1,770 persons. Therefore, the proposed project would create a demand for approximately 5.31 acres of parkland.

Project Alternative. As concluded in Response 4.13(b) above, the population growth associated with the project alternative would total approximately 2,424 persons. Therefore, the project alternative would create a demand for approximately 7.27 acres of parkland.

There are currently no park facilities located on the project site. The project would develop one private recreation center, two neighborhood parks, and one public passive park on four lots (Lots 14, 15, 16, and 17) for a total of 6.1 acres. The proposed 1,500-square foot private recreation center would be located on a 1.9-acre lot (Lot 14). The two proposed public parks would each be approximately 0.5 acres, and would be situated on Lots 15 and 16. The 3.2 acre passive public park is also proposed to be located at the southernmost portion of the project site (Lot 17). In addition to the proposed 6.1-acres of park uses, the project would provide an 8.0-foot wide trail easement at the northwestern portion of the site, which would connect the existing Serrano Creek Trail with the project site. The Development Agreement associated with General Plan 2008-02C and Zone Change 2008-03 includes provisions for contributions towards community-wide park facilities, such as a sports park and community center. Compliance with the Development Agreement, combined with the provision of on-site neighborhood parks and the passive park, would satisfy the City's park allocation standard. Thus, the project would not cause deterioration in existing City parks and would not require the expansion of physical park

facilities. Conversely, it contributes to additional Citywide park resources. Impacts are less than significant and this topic will not be further analyzed in the EIR.

4.14(a)(5) Other public facilities?

Less Than Significant Impact. Library services in the area are provided by Orange County Public Library (OCPL), which maintains 33 library facilities. Two of these libraries are located in the project vicinity, at 27002 Cabriole Way (1.75 miles north of the project site) and 24672 Raymond Way (2.6 miles south of the project site).

Project implementation would generate population growth, which would create a demand for library services. As required by the proposed Area Plan, developers would be required to pay impact fees for library and other public facilities pursuant to the County's regulations. Payment of library (and other public facilities) impact fees would ensure that impacts resulting from the project's anticipated population growth would not result in the deterioration in services or would not require an expansion of physical public service facilities. Impacts are less than significant and this topic will not be further analyzed in the EIR.

4.15 RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				✓
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?		✓		

Impact Analysis

4.15(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?

No Impact. There are currently no parks or other recreational facilities established on the project site. Approximately 6.1 acres of the project site are reserved for parks and the private recreation center site. Approximately 4.2 acres would be developed as neighborhood parkland to provide for the active and passive recreational needs of the community in addition to a 1.9 acre private recreation center site. Therefore, as the project provides new facilities, substantial deterioration of existing park and recreational facilities would not occur. No impact would result and this topic will not be further analyzed in the EIR.

4.15(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?

Less Than Significant Impact With Mitigation Incorporated. The project includes recreational facilities, as described in Response 4.14(a)(4). The proposed recreational facilities would have less than significant impacts on the environment with mitigation incorporated, as concluded throughout this Initial Study. This topic will not be further analyzed in the EIR.

4.16 TRANSPORTATION/TRAFFIC

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			✓	
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?			✓	
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?			✓	
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			✓	
e. Result in inadequate emergency access?		✓		
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?			✓	

INTRODUCTION

This analysis is based on the *Serrano Summit (IRWD Site) Traffic Study* (Traffic Study 2010), prepared by Austin-Foust Associates, Inc., dated April 2010 and the Serrano Summit All-Residential Project Alternative Analysis (Traffic Study 2011), prepared by Austin-Foust Associates, Inc., dated April 5, 2011; refer to Appendix G, *Traffic Study*. The project site has been considered in the previous traffic analyses conducted for the OSA PEIR, dated July 2005 (Draft OSA PEIR) and June 2008 (for Alternative 7 with the addition of a Civic Center). The project is subject to the Lake Forest Transportation Mitigation (LFTM) Program, which is a set of citywide transportation improvements designed to maintain adequate levels of service (LOS) on the City's arterial street system. The LFTM Program is implemented by the City through the Municipal Code, Chapter 7.19, *Lake Forest Transportation Mitigation Program*, which includes provisions for the payment of LFTM fees as development occurs.

Alternative 7 (which was adopted in 2008) included five participating landowners in the *Opportunities Study*. The traffic studies consider this scenario, in order to forecast growth of the land use changes considered as part of the OSA PEIR.

TRAFFIC SCENARIOS CONSIDERED

For purposes of this analysis, the traffic scenarios considered are:

- Existing (No Project);
- Existing Plus Project;
- Year 2015 (No Project);
- Year 2015 Plus Project;
- Year 2030 (No Project); and
- Year 2030 Plus Project.

As concluded in the *Trip Generation – Project Alternative* Section below, the project alternative would generate approximately 23 percent fewer average daily trips than the proposed project. Hence, a finding can be made that the project alternative's traffic and circulation impacts would be similar or no worse than the proposed project's impacts. Accordingly, the various traffic scenarios analyzed below and the recommended mitigation measures for the proposed project, apply also to the project alternative, unless otherwise noted.

METHODOLOGY

The existing average daily trips (ADT) and peak hour counts were conducted in 2008 and 2009.

Forecast volumes used in the analysis are based on the City's Lake Forest Traffic Analysis Model (LFTAM). For the purposes of the Traffic Impact Analysis, the project is assumed to be completed in approximately year 2014 or thereafter, with the Alton Parkway extension between Towne Centre Drive and Irvine Boulevard being completed by that timeframe as well.

For purposes of cumulative considerations (year 2030 scenarios), the General Plan is anticipated to be built out by year 2030. Assuming a linear growth of traffic and development between now and year 2030, a growth of 25 percent in the OSA is assumed for the year 2015 cumulative analysis. The proposed project is assumed to be built out under the "plus project" scenarios, in order to provide conservative analyses. Land use and trip generation buildout for the OSA sites under cumulative conditions are considered for the "with project" condition in the year 2030. Buildout of the General Plan and neighboring cities is assumed for the long-range analysis, and only committed network improvements are assumed to be built. Therefore, the Portola Parkway gap and I-5/Ridge Route Overcrossing are not assumed to be completed.

EXISTING (NO PROJECT) CONDITIONS

Existing Circulation System

The project site is located between Lake Forest Drive and Bake Parkway (both four-lane primary arterials) near Commercentre Drive (a four-lane secondary arterial). Direct access to the project site is provided along Commercentre Drive at Biscayne Bay Drive and Indian Ocean Drive (both two-lane local roads).

Existing Traffic Volumes

Existing ADT volumes for the study area are illustrated in Figure 2 of the Traffic Study 2011.

Existing Intersection LOS

The existing ICU values for the study intersections are summarized in Table 4.16-1, *Existing Intersection LOS*. As indicated in Table 4.16-1, all study area intersections are currently operating at LOS "C" or better (i.e., the ICU does not exceed 0.80).

Table 4.16-1
Existing Intersection LOS

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
Alton Parkway and SR-241 Ramps	0.20	A	0.26	A
Bake Parkway and Commercentre Drive	0.54	A	0.74	C
Bake Parkway and Dimension Drive	0.55	A	0.68	B
Bake Parkway and Irvine Boulevard/Trabuco Road	0.78	C	0.76	C
Bake Parkway and N. Rancho Parkway	0.70	B	0.66	B
Bake Parkway and S. Rancho Parkway	0.60	A	0.74	C
Biscayne Bay Drive and Commercentre Drive	0.20	A	0.26	A
Dimension Drive and Commercentre Drive	0.40	A	0.58	A
Indian Ocean Drive and Commercentre Drive	0.18	A	0.20	A
Lake Forest Drive and Dimension Drive	0.49	A	0.48	A
Lake Forest Drive and Rancho Parkway	0.40	A	0.47	A
Lake Forest Drive and SR-241 NB	0.31	A	0.38	A
Lake Forest Drive and SR-241 SB	0.48	A	0.45	A
Lake Forest Drive and Trabuco Road	0.63	B	0.65	B

Notes:
ICU – intersection capacity utilization; LOS – level of service; N,S – north, south; NB,SB – northbound, southbound
LOS ranges: 0.00 – 0.60 A
0.61 – 0.70 B
0.71 – 0.80 C
0.81 – 0.90 D
0.91 – 1.00 E
Above 1.00 F

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010.

PERFORMANCE CRITERIA

Based on the City's *CEQA Significance Thresholds Guide*, a proposed project would normally have a significant impact if:

- The intersection capacity utilization (ICU) values at intersections, with the proposed project, exceed the City's performance criteria as specified in Table C-3 of the General Plan Circulation Element; and/or

- The proposed project includes 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.

A set of performance criteria have been utilized to identify the future LOS deficiencies on the study area circulation system and also to define impacts and peak hour ICU values of significance. Traffic LOS is designated "A" through "F", with LOS "A" representing free flow conditions and LOS "F" representing severe traffic congestion. By practice, the ICU methodology assumes that intersections are signalized.

LOS "D" (ICU not to exceed 0.90) is the performance standard for the study area intersections. The criteria are based on LOS calculation methodology and performance standard that have been adopted by the City and the Orange County Transportation Authority (OCTA) as part of the Congestion Management Program (CMP). The performance criteria applied here are the same as that used in the previous OSA PEIR traffic analysis. For ICU greater than the acceptable LOS, mitigation for the project's contribution is required in order to bring the intersection back to an acceptable LOS or to no-project conditions (if project contribution is 0.02 or greater) for all study area intersections.

Impact Analysis

4.16(a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less Than Significant Impact.

Trip Generation

Table 4.16-2, *Trip Generation Rates*, outlines the trip generation rates used to forecast the traffic volumes associated with the proposed project and project alternative.

Table 4.16-2
Trip Generation Rates

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Single-Family Detached	DU	0.19	0.56	0.75	0.64	0.37	1.01	9.57
Condominium	DU	0.17	0.50	0.67	0.45	0.33	0.78	8.15
Condominium Facility	TSF	0.82	0.17	0.99	2.28	2.46	4.74	45.5
Apartments	DU	0.10	0.41	0.51	0.40	0.22	0.62	6.72
Government Facility	TSF	1.97	0.24	2.21	0.88	1.97	2.85	27.92

Note:
1. The trip rates above are used in the LFTAM.
ADT – average daily trips; DU – dwelling unit; LFTAM – Lake Forest Traffic Analysis Model; TSF – thousand square feet

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010, and Austin-Foust Associates, Inc., *Serrano Summit All-Residential Project Alternative Analysis*, dated April 5, 2011.

Proposed Project. Buildout land use and trip generation for the proposed project, including the Civic Center are summarized in Table 4.16-3, *Trip Generation - Proposed Project*. For purposes of this analysis, a conservative housing type mix was considered with a maximum of 608 dwelling units. The housing types considered include 150 single-family detached homes and 458 for-sale attached homes. The Civic Center includes 114,000 square feet of public facilities (a 44,000-square foot City Hall, a 20,000-square foot community center, and 50,000-square foot government facility). The proposed passive public park and 1,500 square foot private recreation center serving the neighborhood are also considered.

Table 4.16-3
Trip Generation – Proposed Project

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Residential Uses								
Single-Family Detached	150 DU	29	84	113	98	54	152	1,436
Condominium	458 DU	78	230	308	206	151	357	3,732
Total Residential		*107*	*314*	*421*	*304*	*205*	*509*	*5,168*
Private Recreation Center								
Community Facility	1.5 TSF	1	0	1	3	4	7	68
Civic Center								
Community Facility	20 TSF	16	3	19	46	49	95	910
Government Facility	94 TSF	185	23	208	83	185	268	2,624
Total Civic Center		*201*	*26*	*227*	*129*	*234*	*363*	*3,534*
Total Proposed Project		*309*	*340*	*649*	*436*	*443*	*879*	*8,770*

Note:
1. The trip rates above are used in the LFTAM.
ADT – average daily trips; DU – dwelling unit; LFTAM – Lake Forest Traffic Analysis Model; TSF – thousand square feet

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010.

Based on trip rates used in the LFTAM (refer to Table 4.16-2), the proposed project would generate 8,770 ADT with seven and ten percent of the ADT occurring in the AM and PM peak hours, respectively.

Project Alternative. Buildout land use and trip generation for the project alternative, including residential uses on Lot 13, are summarized in Table 4.16-4, *Trip Generation – Project Alternative*. For purposes of this analysis, a conservative housing type mix was considered with a maximum of 833 dwelling units. The housing types considered include 150 single-family detached homes, 458 for-sale attached homes, and 225 apartments. As with the proposed project, the proposed 1,500 square foot private recreation center was considered. Based on trip rates used in the LFTAM (refer to Table 4.16-2), the project alternative would generate 6,748 ADT with eight and ten percent of the ADT occurring in the AM and PM peak hours, respectively. Comparatively, the project alternative would generate approximately 23 percent (or 2,022) fewer ADT than the proposed project. Therefore, it is concluded, that the project alternative's impacts would be similar or no worse than the proposed project's impacts. Accordingly, the various traffic scenarios analyzed below and the recommended mitigation measures for the proposed project, apply also to the project alternative, unless otherwise noted.

Table 4.16-4
Trip Generation – Project Alternative

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Residential Uses								
Single-Family Detached	150 DU	29	84	113	98	54	152	1,436
Condominium	458 DU	78	230	308	206	151	357	3,732
Apartments	225	23	92	115	90	50	140	1,512
Total Residential		*130*	*406*	*536*	*394*	*255*	*649*	*6,680*
Private Recreation Center								
Community Facility	1.5 TSF	1	0	1	3	4	7	68
Total Proposed Project		*131*	*406*	*537*	*397*	*259*	*656*	*6,748*

Note:
1. The trip rates above are used in the LFTAM.
ADT – average daily trips; DU – dwelling unit; LFTAM – Lake Forest Traffic Analysis Model; TSF – thousand square feet
Source: Austin-Foust Associates, Inc., *Serrano Summit All-Residential Project Alternative Analysis*, dated April 5, 2011.

Proposed Circulation System

The Area Plan proposes a Circulation Plan that addresses both regional and local circulation requirements. The Circulation Plan provides for efficient movement of vehicular traffic through the community, as well as providing for pedestrian and bicycle access. A fundamental objective for the Circulation Plan is to reduce the resident's reliance of automobiles as a primary means of transportation through the project site.

As depicted in the Area Plan, Commercentre Drive provides access from Bake Parkway to the two on-site collector streets (Biscayne Bay Drive [referred to as "A" Street] and Indian Ocean Drive). The project would be served internally by a network of public collector roadways and private local streets that are designed to promote efficient internal circulation. There are three collector streets within the project site: Indian Ocean Drive; "A" Street; and "B" Street. "B" Street incorporates two roundabouts at either end. These one-lane roundabouts are designed to create a sense of arrival and encourage drivers to proceed slowly. "C" Street is proposed as a private street.

Existing Plus Project Conditions

The purpose of the existing plus project scenario is to comply with CEQA, which provides that the baseline for assessing environmental impacts is generally the existing conditions at the time that the environmental document for the project is prepared. The information presented in this section shows the traffic volumes obtained by adding traffic from the worst-case proposed project (i.e., residential with civic center uses as analyzed in 2010) to existing traffic, irrespective of the proposed project's buildout timeframe. Any comparative traffic analysis of full buildout of the proposed project versus existing traffic conditions would be hypothetical because of the actual buildout timeframe of the project (approximately year 2014 or later). Hence the information provided here is intended to satisfy the CEQA requirements by showing the volume comparison arising from this hypothetical scenario.

Existing Plus Project Traffic Forecasts

The ADT forecasts were prepared for a scenario in which traffic generated by the proposed project is added to the existing present-day traffic conditions based on the project trip distribution from the LFTAM that are illustrated in Figure 1 of the Traffic Study 2011. The existing version of the LFTAM was used to determine the effect of the difference between the existing traffic model conditions and the proposed project on existing traffic conditions in the study area and to distribute the traffic associated with the proposed project onto the existing circulation system. Figures 2 and 3 of the Traffic Study 2011 illustrate the ADT volumes for existing and existing plus project conditions. This study area is consistent with that studied in the Traffic Study 2010.

Existing Plus Project Evaluation Context

As noted above, this evaluation of impacts is hypothetical because the proposed project is not a near-term construction project. Occupancy of any portion of the project site is not anticipated to commence in year 2011, and buildout of the site is anticipated to occur around year 2014 or later. Therefore, the traffic generated by the proposed project would not be placed on the existing, present day roadway system and existing traffic conditions but would occur with phased improvements as part of project buildout. Also, the existing plus project scenario does not account for future population and development growth in the City of Lake Forest and surrounding areas. These population and development growth projections would add traffic to the existing roadway system, with or without the proposed project, and must be accounted for in the evaluation of the proposed project's potential traffic impacts. In addition the circulation system is projected to change over time, with or without the proposed project, and these circulation system changes include new roadways and the improvement of existing roadways through established programs such as the Foothill Corridor Phasing Plan (FCPP), the North Irvine Transportation Mitigation (NITM) Program in nearby City of Irvine, and the proposed LFTM Program. For these reasons, the existing plus project scenario is informational in nature and has not been analyzed in the same manner as the 2015 plus project and 2030 plus project (i.e., the interim year and long-range context) that were the subject of analysis in the Traffic Study 2010.

Overall, when comparing the proposed project's ADT volumes, the ADT volumes under existing plus project conditions are not much higher than existing counts for most of the City's arterial street system surrounding the project site.

Existing Plus Project Intersection LOS

The existing plus project ICU values for the study area intersections illustrated in Figure 4 of the Traffic Study 2011 are summarized in Table 4.16-5, *Existing Plus Project Intersection LOS*. As indicated in Table 4.16-5, all study area intersections would operate at LOS "D" or better (i.e., ICU does not exceed .90) under existing plus project conditions.

Table 4.16-5
Existing Plus Project Intersection LOS

Intersection	Existing				Existing Plus Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
Alton Parkway and SR-241 Ramps	0.20	A	0.26	A	0.20	A	0.26	A	0.00	0.00
Bake Parkway and Commercentre Drive	0.54	A	0.74	C	0.31	A	0.38	A	0.00	0.00
Bake Parkway and Dimension Drive	0.55	A	0.68	B	0.48	A	0.46	A	0.00	0.01
Bake Prkwy and Irvine Blvd./Trabuco Rd	0.78	C	0.76	C	0.71	C	0.68	B	0.01	0.02
Bake Parkway and N. Rancho Parkway	0.70	B	0.66	B	0.40	A	0.47	A	0.00	0.00
Bake Parkway and S. Rancho Parkway	0.60	A	0.74	C	0.61	B	0.75	C	0.01	0.01
Biscayne Bay Dr. and Commercentre Dr.	0.20	A	0.26	A	0.61	B	0.80	C	0.07	0.06
Dimension Drive and Commercentre Drive	0.40	A	0.58	A	0.81	D	0.79	C	0.03	0.03
Indian Ocean Dr. and Commercentre Dr.	0.18	A	0.20	A	0.64	B	0.65	B	0.01	0.00
Lake Forest Drive and Dimension Drive	0.49	A	0.48	A	0.55	A	0.65	B	0.00	-0.02
Lake Forest Drive and Rancho Parkway	0.40	A	0.47	A	0.54	A	0.51	A	0.05	0.03
Lake Forest Drive and SR-241 NB	0.31	A	0.38	A	0.31	A	0.40	A	0.11	0.14
Lake Forest Drive and SR-241 SB	0.48	A	0.45	A	0.35	A	0.43	A	0.17	0.23
Lake Forest Drive and Trabuco Road	0.63	B	0.65	B	0.43	A	0.64	B	0.04	0.06

Notes:
ICU – intersection capacity utilization; LOS – level of service; N,S – north, south; NB,SB – northbound, southbound
LOS ranges: 0.00 – 0.60 A
0.61 – 0.70 B
0.71 – 0.80 C
0.81 – 0.90 D
0.91 – 1.00 E
Above 1.00 F

Source: Austin-Foust Associates, Inc., Serrano Summit Al-Residential Project Alternative [Traffic] Analysis, dated April 2011.

Year 2015 (No Project) Conditions

Year 2015 (No Project) Traffic Volumes

The ADT volumes for the year 2015 no project conditions are presented in Figures 7 and 8 of the Traffic Study 2010.

Year 2015 (No Project) Intersection LOS

The year 2015 (no project) ICU values for the study area intersections are summarized in Table 4.16-6, *Year 2015 Intersection LOS*. All intersections are expected to operate at an acceptable LOS "D" or better (i.e., ICU does not exceed 0.90) under year 2015 (no project) conditions. Therefore, less than significant impacts would occur in this regard.

Table 4.16-6
Year 2015 Intersection LOS Summary

Intersection	No Project				Plus Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
Development Concept										
Alton Parkway and Commercentre Drive	0.47	A	0.56	A	0.49	A	0.59	A	0.02	0.03
Alton Parkway and SR-241 Ramps	0.45	A	0.37	A	0.44	A	0.37	A	-0.01	0.00
Alton Parkway and Towne Centre Drive	0.65	B	0.56	A	0.65	B	0.56	A	0.00	0.00
Bake Parkway and Commercentre Drive	0.57	A	0.66	B	0.59	A	0.71	C	0.02	0.05
Bake Parkway and Dimension Drive	0.59	A	0.76	C	0.57	A	0.77	C	-0.02	0.01
Bake Parkway and Irvine Boulevard/Trabuco Road	0.88	D	0.77	C	0.88	D	0.77	C	0.00	0.00
Bake Parkway and N. Rancho Parkway	0.66	B	0.74	C	0.65	B	0.74	C	-0.01	0.00
Bake Parkway and S. Rancho Parkway	0.64	B	0.69	B	0.63	B	0.69	B	-0.01	0.00
Biscayne Bay Drive and Commercentre Drive	0.25	A	0.30	A	0.34	A	0.43	A	0.09	0.13
Dimension Drive and Commercentre Drive	0.43	A	0.65	B	0.51	A	0.75	C	0.08	0.10
Indian Ocean Drive and Commercentre Drive	0.21	A	0.24	A	0.37	A	0.46	A	0.16	0.22
Lake Forest Drive and Dimension Drive	0.48	A	0.52	A	0.49	A	0.54	A	0.01	0.02
Lake Forest Drive and Rancho Parkway	0.55	A	0.74	C	0.55	A	0.74	C	0.00	0.00
Lake Forest Drive and SR-241 NB	0.31	A	0.36	A	0.31	A	0.36	A	0.00	0.00
Lake Forest Drive and SR-241 SB	0.41	A	0.43	A	0.41	A	0.43	A	0.00	0.00
Lake Forest Drive and Trabuco Road	0.82	D	0.81	D	0.81	D	0.83	D	-0.01	0.02

Notes:
1. **Bold** - Significantly impacted according to the performance criteria.
ICU – intersection capacity utilization; LOS – level of service; N,S – north, south; NB,SB – northbound, southbound

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010.

Year 2015 Plus Project Conditions

Year 2015 Plus Project Traffic Volumes

The ADT volumes for the year 2015 plus project conditions are presented in Figures 9 and 10 of the Traffic Study 2010.

Year 2015 Plus Project Intersection LOS

The year 2015 plus project ICU values for the study area intersections are summarized in Table 4.16-6. All intersections are expected to operate at an acceptable LOS "D" or better under year 2015 plus project conditions. At completion of the proposed project, the project-generated traffic operations would not exceed the capacity of the existing circulation system for the development scenarios. Impacts would be less than significant and this topic will not be further discussed in the EIR.

Year 2030 (No Project) Conditions

Year 2030 (No Project) Traffic Volumes

The ADT volumes under year 2030 no project conditions are presented in Figures 12 and 13 of the Traffic Study 2010.

Year 2030 (No Project) Intersection LOS

The year 2030 (no project) ICU values for the study area intersections are summarized in Table 4.16-7, *Year 2030 Intersection LOS*.

Table 4.16-7
Year 2030 Intersection LOS

Intersection	No-Project				With-Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
Development Concept										
Alton Parkway and Commercentre Drive	0.62	B	0.75	C	0.64	B	0.78	C	0.02	0.03
Alton Parkway and SR-241 Ramps	0.64	B	0.54	A	0.64	B	0.56	A	0.00	0.02
Alton Parkway and Towne Centre Drive	0.92	E	0.84	D	0.92	E	0.82	D	0.00	-0.02
Bake Parkway and Commercentre Drive	0.65	B	0.71	C	0.68	B	0.74	C	0.03	0.03
Bake Parkway and Dimension Drive	0.72	C	0.80	C	0.70	B	0.78	C	-0.02	-0.02
Bake Parkway and Irvine Boulevard/Trabuco Road	1.15	F	1.01	F	1.14	F	1.02	F	-0.01	0.01
Bake Parkway and N. Rancho Parkway	0.71	C	0.88	D	0.70	B	0.87	D	-0.01	-0.01
Bake Parkway and S. Rancho Parkway	0.75	C	0.81	D	0.76	C	0.81	D	0.01	0.00
Biscayne Bay Drive and Commercentre Drive	0.25	A	0.30	A	0.35	A	0.44	A	0.10	0.14
Dimension Drive and Commercentre Drive	0.44	A	0.67	B	0.54	A	0.78	C	0.10	0.11
Indian Ocean Drive and Commercentre Drive	0.22	A	0.24	A	0.38	A	0.47	A	0.16	0.23
Lake Forest Drive and Dimension Drive	0.55	A	0.61	B	0.57	A	0.63	B	0.02	0.02
Lake Forest Drive and Rancho Parkway	0.90	D	1.18	F	0.89	D	1.17	F	-0.01	-0.01
Lake Forest Drive and SR-241 NB	0.33	A	0.44	A	0.33	A	0.44	A	0.00	0.00
Lake Forest Drive and SR-241 SB	0.51	A	0.50	A	0.53	A	0.50	A	0.02	0.00
Lake Forest Drive and Trabuco Road	0.83	D	0.90	D	0.85	D	0.85	D	0.02	-0.05

Notes:
1. **Bold** - Significantly impacted according to the performance criteria.
ICU – intersection capacity utilization; LOS – level of service; N,S – north, south; NB,SB – northbound, southbound

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010.

As indicated in Table 4.16-7, all intersections are expected to operate at an acceptable LOS "D" or better under year 2030 (no project) conditions, except the following:

- Alton Parkway and Towne Centre Drive
- Bake Parkway and Irvine Boulevard/Trabuco Road; and

- Lake Forest Drive and Rancho Parkway.

Year 2030 Plus Project Conditions

Year 2030 Plus Project Traffic Volumes

The ADT volumes under year 2030 plus project conditions are presented in Figures 14 and 15 of the Traffic Study 2010.

Year 2030 Plus Project Intersection LOS

The year 2030 plus project ICU values for the study area intersections are summarized in Table 4.16-7. As indicated in Table 4.16-7, all intersections are expected to operate at an acceptable LOS "D" or better under year 2030 plus project conditions, except the following:

- Alton Parkway and Towne Centre Drive;
- Bake Parkway and Irvine Boulevard/Trabuco Road; and
- Lake Forest Drive and Rancho Parkway.

As previously noted, for ICU greater than the acceptable LOS, mitigation for the project's contribution is required in order to bring the intersection back to an acceptable LOS or to no-project conditions (if project contribution is 0.02 or greater). Based on the performance criteria, no significant impacts would result from project implementation.

Year 2030 Plus Project Conditions Mitigated

Mitigation measures that were developed for the intersection locations identified as being potentially impacted by the *Opportunities Study* development were incorporated into the LFTM Program. The following LFTM Program improvements would apply to the Bake Parkway and Irvine Boulevard/Trabuco Road intersection:

- Add second northbound left;
- Convert third westbound through and westbound right to shared fourth westbound through/westbound right-turn lane; and
- Re-stripe third eastbound through to shared third eastbound through/second eastbound right.

With implementation of the LFTM Program (required by the Lake Forest Municipal Code, Chapter 7.19), the project's impacts to the Bake Parkway and Irvine Boulevard/Trabuco Road intersection would result in an acceptable LOS "D" in the PM peak hour as well as the AM peak hour (AM and PM peak hour ICUs both equal 0.90). These mitigation measures would be implemented through the LFTM Program Improvements as fully funded. The project's participation in the LFTM Program fulfills its obligation towards the mitigation measures at this intersection. The City may also use an additional source of funding for these improvements through the City of Irvine's North Irvine Transportation Mitigation (NITM) Program.

The NITM Program established a funding mechanism for the transportation improvement mitigation measures identified in past EIRs prepared by the City of Irvine for three future development projects: (1) Spectrum 8/PA40, (2) Irvine Northern Sphere Area (PAs 5B, 6, 8A,

9A and 9B), and (3) the Orange County Great Park. Improvements identified in the NITM included intersections in the City of Lake Forest with a specified funding share of those improvements included in the NITM.

Therefore, pursuant to the City's Municipal Code Chapter 7.19, the Director of Public Works/City Engineer would verify the project's consistency with the LFTM Program. At buildout of the proposed project, the project-generated traffic operations would not exceed the capacity of the existing circulation system for both the Development Concept and the Current General Plan development scenarios upon compliance with Chapter 7.19. Impacts would be reduced to less than significant levels and this topic will not be further discussed in the EIR.

On-Site Access and Internal Circulation

This section considers potential impacts related to on-site access and internal circulation. The subjects covered include a roundabout analysis, driveway access, signalization, and left-turn storage requirements. First, the volumes on-site under year 2015 and year 2030 conditions are presented and analyzed including a roundabout analysis. Then an analysis of Biscayne Bay Drive and Indian Ocean Drive at Commercentre Drive is provided that determines the adequacy of signalization and left-turn storage requirements.

The future on-site ADT and peak hour volumes for conditions with buildout of the proposed project are presented in Figure 16 of the Traffic Study 2010. Figure 16 also illustrates the lane configurations and a map of intersections considered for the project.

Roundabout Analysis

The performance of the two roundabouts along "B" Street, one at "A" Street and the other at Indian Ocean Drive, is considered. The LOS results for the roundabouts and intersection analyzed are summarized in Table 4.16-8, *On-Site Roundabout and Intersection LOS Summary*. The circulation system planned on "B" Street for the project site consisting of a two-way stop-controlled intersection in between two roundabouts is expected to adequately perform with LOS "B" or better.

The project's proposed roundabout design is in accordance with the *Federal Highway Administration Roundabout Guidelines*. Figure 19 of the Traffic Study 2010 presents a truck turning analysis for each roundabout that would enable any sized truck to safely navigate the roundabouts. For worst-case analysis, a large-sized vehicle is assumed (i.e., a WB-40 5-axle truck), which is an unlikely occurrence since there are no designated truck routes in this area. Based on this analysis, the proposed design for the two on-site roundabouts is considered to be adequate to serve the project. Less than significant impacts would result, as the project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections). This topic will not be further analyzed in the EIR.

Table 4.16-8
On-Site Roundabout and Intersection LOS Summary

Location	AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS
Roundabout				
"A" Street and "B" Street	12.3	B	12.3	B
Indian Ocean Drive and "B" Street	12.9	B	12.6	B
Intersection (Unsignalized/Two-Way Stop-Controlled)[1]				
Private "D" Street/Private "E" Street and "B" Street	8.7	A	8.9	A

Notes:
1. Continuous traffic flow on "B" Street and stop signs for "D" Street and "E" Street, both private roads.
2. See Figure 16 for location map.
3. The SIDRA software package is used for the roundabout analysis, and the Highway Capacity Manual (HCM) is used for the unsignalized intersection analysis.
4. The level of service (LOS) of the roundabouts and intersection is based on the average delay (in seconds) of the worst movement (in the case of stop control, the worst side street movement).

Level of Service	Roundabout	Intersection
A	≤ 10.0	≤ 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	> 80.0	> 50.0

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010.

Driveway Access

The future ADT and peak hour volumes on Commercentre Drive from Bake Parkway to Dimension Drive (under years 2015 and 2030 conditions), with buildout of the proposed project, are presented in Figures 20 through 23 of the Traffic Study 2010. The study area intersections would all operate at LOS "D" or better after implementation of the City's LFTM Program. Signalization and the left-turn pocket length requirements for left-turns affected by the project are evaluated at Biscayne Bay Drive and Indian Ocean Drive intersections with Commercentre Drive. It is noted that Biscayne Bay Drive is referred to as "A" Street as it enters the project site. According to the Traffic Study 2010, the proposed driveway access is considered to be adequate to serve the project. Less than significant impacts would result, as the project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections). This topic will not be further analyzed in the EIR.

Signalization

The signal warrant analysis has been carried out for the intersections of Biscayne Bay Drive and Indian Ocean Drive at Commercentre Drive. The signal warrant analysis uses the approach volumes previously presented in Figures 22 and 23 of the Traffic Study 2010. The signal warrant analysis under years 2015 and 2030 (no project) and 2030 plus project conditions are summarized in Table 4.16-9, *2015 Peak Hour Signal Warrant*, and Table 4.16-10, *2030 Peak Hour Signal Warrant*.

Table 4.16-9
2015 Peak Hour Signal Warrant

Intersection	Direction	Development Concept	
		AM Peak Hour	PM Peak Hour
Year 2015 No-Project			
Biscayne Bay Drive and Commercentre Drive			
Major Approach	Eastbound	500	300
	Westbound	310	330
	Total	810	630
Minor Approach	Southbound	40	--
	Northbound	--	220
Satisfies Warrant (Higher Speeds/Rural)?		No	**Yes**
Indian Ocean Drive and Commercentre Drive			
Major Approach	Eastbound	440	470
	Westbound	340	320
	Total	780	790
Minor Approach	Northbound	20	60
Satisfies Warrant (Higher Speeds/Rural)?		No	No
Year 2015 With-Project			
Biscayne Bay Drive and Commercentre Drive			
Major Approach	Eastbound	660	530
	Westbound	390	430
	Total	1,050	960
Minor Approach	Northbound	130	350
Satisfies Warrant (Higher Speeds/Rural)?		**Yes**	**Yes**
Indian Ocean Drive and Commercentre Drive			
Major Approach	Eastbound	550	670
	Westbound	550	520
	Total	1,100	1,190
Minor Approach	Northbound	250	370
Satisfies Warrant (Higher Speeds/Rural)?		**Yes**	**Yes**

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010.

According to the Traffic Study 2010, traffic signals are warranted at the intersection of Biscayne Bay Drive and Commercentre Drive under year 2015 (no project) conditions. Under years 2015 and 2030, both intersections warrant traffic signals under plus project conditions. Typically, signals are not installed until signal warrants are met. However, the project developer is required to adhere to City policy for signal installation requirements.

Pursuant to the City's Municipal Code, Section 12.04.040, *Traffic Administration*, the Director of Public Works/City Engineer would be required to determine the project's compliance with the City's standards and regulations pertaining to proper installation of traffic-control devices, design, and the review of traffic flow systems and appurtenances proposed. The Director of Public Works/City Engineer would verify the project's consistency with the City's policy for signal installation requirements. Following compliance with Municipal Code Section 12.04.040,

impacts pertaining to signal installation requirements would be reduced to less than significant levels. This topic will not be further analyzed in the EIR.

Table 4.16-10
2030 Peak Hour Signal Warrant

Intersection	Direction	Development Concept	
		AM Peak Hour	PM Peak Hour
Year 2030 No-Project			
Biscayne Bay Drive and Commercentre Drive			
Major Approach	Eastbound	520	310
	Westbound	290	320
	Total	810	630
Minor Approach	Southbound	40	--
	Northbound	--	220
Satisfies Warrant (Higher Speeds/Rural)?		No	**Yes**
Indian Ocean Drive and Commercentre Drive			
Major Approach	Eastbound	470	480
	Westbound	350	320
	Total	820	800
Minor Approach	Northbound	20	60
Satisfies Warrant (Higher Speeds/Rural)?		No	No
Year 2030 With-Project			
Biscayne Bay Drive and Commercentre Drive			
Major Approach	Eastbound	680	550
	Westbound	390	430
	Total	1,070	980
Minor Approach	Northbound	130	350
Satisfies Warrant (Higher Speeds/Rural)?		**Yes**	**Yes**
Indian Ocean Drive and Commercentre Drive			
Major Approach	Eastbound	580	700
	Westbound	550	520
	Total	1,130	1,220
Minor Approach	Northbound	250	370
Satisfies Warrant (Higher Speeds/Rural)?		**Yes**	**Yes**

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010.

Left-Turn Storage Requirements

Left-turn pocket lengths at Biscayne Bay Drive and Indian Ocean Drive intersections along Commercentre Drive with exclusive left-turn lanes were estimated based on the highest peak hour volume under years 2015 and 2030 conditions. The worst-case estimated left-turn storage length requirements for the intersections analyzed are summarized in Table 4.16-11, *Left-Turn Storage Length Requirements*.

Table 4.16-11
Left-Turn Storage Length Requirements

Intersection	Movement	Time Frame	Peak Hour	Volume	Lane(s)	Volume Per Lane	Length
Biscayne Bay Drive and Commercentre Drive	WBL	2015/2030	AM	60	1	60	150'
	NBL	2015/2030	PM	210	1	210	210'
Indian Ocean Drive and Commercentre Drive	WBL	2015/2030	AM	190	1	190	190'
	NBL	2015/2030	PM	140	1	140	140'

Notes:
E/W – East/West; NBL- Northbound Left-Turn; N/S – North/South; WBL – Westbound Left-Turn

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010.

As indicated in Table 4.16-11, a westbound left-turn 190-foot pocket is required on Commercentre Drive at Indian Ocean Drive. This is based on vehicle storage requirements, and is thereby exclusive of a transition length (typically, 90 feet). However, the length of back-to-back left-turns is restricted due to the distance between Indian Ocean Drive and Dimension Drive intersections on Commercentre Drive of approximately 430 feet. In order to ensure that the close signal spacing is adequate to accommodate the back-to-back left-turn vehicle storage, a special "Conditional Service" type of left-turn phasing must be applied at Indian Ocean Drive and Commercentre Drive. The special phasing entails displaying the east-west left-turn phases twice during the cycle rather than once. This is achieved by calling up the left-turn arrows both as a leading and a lagging phase for the associated through movement. As shown in Table 4.16-12, *Cumulative Left-Turn Storage Length Requirements*, this results in a reduced queue length of left-turn vehicle storage than that required for a conventional leading left-turn phasing. There is a small loss in overall capacity in this type of left-turn phasing. However, since it avoids a spillover of vehicles queued up in the left-turn storage lane, which would block the adjacent through lane, the net effect is an overall benefit and makes signalization of two closely spaced intersections feasible.

Pursuant to the Municipal Code Section 12.04.040, the Director of Public Works/City Engineer would verify the project's compliance with the implementation of a special "Conditional Service" type of left-turn phasing at Indian Ocean Drive and Commercentre Drive. Following compliance with Municipal Code Section 12.04.040, impacts pertaining to left-turn storage requirements would be reduced to less than significant levels. This topic will not be further analyzed in the EIR.

Conclusion

The results of the analysis indicate that neither the proposed project or project alternative) would adversely impact any off-site locations. The improvements at the Bake Parkway and Irvine Boulevard/Trabuco Road intersection would be fully funded by the LFTM Program and Irvine's NITM Program. Since the improvements are included in the LFTM Program (required by the City through Municipal Code Chapter 7.19), the project's participation in the LFTM Program would fulfill its obligation towards the mitigation of the Bake Parkway and Irvine Boulevard/Trabuco Road intersection, and impacts would be reduced to less than significant levels.

Table 4.16-12
Cumulative Left-Turn Storage Length Requirements

Scenario	Movement	Time Frame	Peak Hour	Volume	Lane(s)	Volume Per Lane	Queue Length
Development Concept With-Project	WBL	2015	AM	160	1	160	82'
			PM	190	1	190	120'
		2030	AM	160	1	160	86'
			PM	190	1	190	119'
Current General Plan With-Project	WBL	2015	AM	160	1	160	86'
			PM	190	1	190	116'
		2030	AM	160	1	160	72'
			PM	190	1	190	120'

Note:
1. Commercentre Drive is oriented east/west, and Indian Ocean Drive is oriented north/south.
2. The queue length is based on the HCM results using Synchro software assuming that the signals at the intersections of Indian Ocean Drive and Dimension Drive on Commercentre Drive are coordinated (see Appendix C for HCM worksheets).

HCM – Highway Capacity Manual; WBL – Westbound Left-Turn

Source: Austin-Foust Associates, Inc., *Serrano Summit (IRWD Site) Traffic Study*, dated April 2010.

The results of the analysis also determined that the access driveways and roundabout designs are adequate as designed and would accommodate the project with no adverse traffic conditions on the local circulation system.

The project would result in the need for signal warrants in all cases at the intersection of Indian Ocean Drive and Commercentre Drive. The project developer would be required to adhere to City policy for signal installation and timing requirements for those locations where the project causes the need for signalization (Municipal Code Section 12.04.040). Therefore, upon compliance with Municipal Code Chapter 7.19 and Section 12.04.040, impacts would be reduced to less than significant levels, as the project would not exceed the capacity of the existing circulation system. This topic will not be further analyzed in the EIR.

4.16(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?

Less Than Significant Impact. The criteria used in Response 4.16(a) are based on the LOS calculation methodology and performance standard that have been adopted by the City and OCTA as part of the CMP. Therefore, as concluded in Response 4.16(a), a less than significant impact would result with implementation of the LFTM Program (required by the City through Chapter 7.19 of the Municipal Code). The project would not result in a conflict with the CMP for designated roads or highways and this topic will not be further analyzed in the EIR.

4.16(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?

Less Than Significant Impact. Table 2-1, *Development Plan Buildout Summary*, summarizes the development anticipated at the project site. Due to the nature and scope of the proposed uses, project implementation would not result in a change in air traffic patterns that results in substantial safety risks. This topic will not be further analyzed in the EIR.

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

Less Than Significant Impact. Refer to Response No. 4.16(a). Additionally, the project is required to be designed to current City or regional standards for streets. Therefore, the project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). This topic will not be further analyzed in the EIR.

4.16(e) Result in inadequate emergency access?

Less Than Significant Impact With Mitigation Incorporated. Refer to Response No. 4.8(g). Major access roads to the project site include Bake Parkway, Lake Forest Drive, and Commercentre Drive. During project construction, temporary road or lane closures (which could potentially block emergency access and/or evacuation routes) may be required along roadways adjacent to the project site. Any such impacts would be limited to the construction period and would affect only adjacent streets or intersections, and as such, would be unlikely to interfere with emergency response vehicles (e.g., fire, police, or ambulance). These activities would require an encroachment permit from the City Public Works Department. Also, the project would be required to adhere to HAZ-4. HAZ-4 would require future development to notify the OCFA, Orange County Sherriff's Department (OCSD), and the City Development Services Department of construction activities that would impede movement (such as road or lane closures) along roadways immediately adjacent to the development area, in order to allow for uninterrupted emergency access and maintenance of evacuation routes.

Any future development at the project site would be subject to the *General Circulation System Development Standards* (Chapter 6.0) of the proposed Area Plan, which requires that all tentative tract map(s) (subject to the Area Plan) provide for adequate emergency and fire access per the OCFA requirements. All future tentative tract maps are subject to review by the OCFA as part of the City's review and approval process.

With implementation of HAZ-4 and Chapter 6.0 of the Area Plan, the project would not conflict with the existing emergency plan or result in inadequate emergency response, and impacts would be less than significant. This topic will not be further analyzed in the EIR.

4.16(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?

Less Than Significant Impact. According to the City's General Plan, public transportation offers an option to the traditional use of an automobile for traveling within and outside of the

community. Non vehicular methods or modes of travel, such as bicycling or walking, can reduce demands on the roadway system where appropriate facilities exist to foster those modes. Together, public transportation and non vehicular modes of travel provide important alternatives to travel by automobile. The following General Plan goals and policies apply to the public transit, bicycle, and/or pedestrian facilities for the project:

Goal 3.0 – Increased use of public transportation.

Policy 3.1. Promote the provision of public transit facilities within areas of major development.

Policy 3.2. Encourage the provision of additional regional public transportation services and support facilities, such as park and ride lots near the San Diego Freeway (I-5) and the Foothill Transportation Corridor.

Policy 3.3. Encourage the provision of special transit services in Lake Forest.

Policy 3.4. Promote access and public transit service between Lake Forest and regional-serving transportation centers.

Goal 4.0 – Promotion of non vehicular modes of travel.

Policy 4.1. Promote the provision of non vehicular circulation within Lake Forest.

Policy 4.2. Provide and maintain a non vehicular component of the Lake Forest overall circulation system that supports bicycles, equestrians, and pedestrians and is coordinated with those of other service districts in Lake Forest and with adjacent jurisdictions.

Policy 4.3. Improve pedestrian access from neighborhoods to commercial areas.

Area Plan Consistency Analysis

One objective of the Area Plan is to create a pedestrian-friendly and bicycle-friendly circulation system, which encourages walking and biking while providing for the safe and efficient movement of automobiles through the community. New sidewalks and multi-use trails, connecting residential neighborhoods, parks, and open space areas are planned at the project site. The network of sidewalks and multi-use trails planned for the project would provide bicycle and pedestrian connectivity throughout. Thus, with implementation of the proposed Area Plan, impacts pertaining to potential conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities would be less than significant. This topic will not be further analyzed in the EIR.

Tentative Tract Map Consistency Analysis

OCTA Route 480 travels along Bake Parkway and Commercentre Drive and connects to the Irvine Station (located at 15215 Barranca Parkway, Irvine). Access to both Metrolink and Amtrak trains are available at the station. In addition, the project would pay the required LFTM fees for city-wide transportation improvements.

The proposed project would construct new sidewalks and a trail easement that would connect the project site (including the public passive park) to the existing Serrano Creek Regional Trail. The network of sidewalks and trails proposed at the project site would provide bicycle and pedestrian connectivity throughout. Thus, with implementation of the proposed Tentative Tract Map, impacts pertaining to potential conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities would be less than significant. This topic will not be further analyzed in the EIR.

4.17 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			✓	
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?			✓	
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			✓	
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			✓	
e. Result in a determination by the 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?			✓	
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			✓	
g. Comply with federal, state, and local statutes and regulations related to solid waste?			✓	

Impact Analysis

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

Less Than Significant Impact. The City requires NPDES permits, as administered by the Santa Ana Regional Water Quality Control Board (RWQCB), according to Federal regulations, for both point source discharges (a municipal or industrial discharge at a specific location or pipe) and nonpoint source discharges (diffuse runoff of water from adjacent land uses) to surface waters of the United States. For point source discharges, such as sewer outfalls, each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge.

Per the proposed Area Plan, development of the project site would be required to comply with all provisions of the NPDES program, as enforced by the RWQCB. Additionally, the NPDES Phase I and Phase II requirements would regulate discharge from construction sites. The project would be required to comply with the wastewater discharge requirements issued by the State Water Resources Control Board (SWRCB) and Santa Ana RWQCB. Therefore, project implementation would not result in an exceedance of wastewater treatment requirements of the RWQCB with respect to discharges to the sewer system or stormwater system within the City. Impacts would be less than significant and this topic will not be further analyzed in the EIR.

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

Less Than Significant Impact. Project implementation would increase water consumption and wastewater generation, placing greater demands on existing facilities. Domestic water would be supplied to the project site by the IRWD. As stated in the Area Plan, the proposed project's average daily water demand would be approximately 200,000 gallons per day (224 acre-feet per year). The project alternative's average daily water demand would be approximately 258,450 gallons per day. Potable water to serve the project site would be provided per the Sub Area Master Plan (SAMP) to be prepared under the supervision of the IRWD and property owner. A Water Supply Assessment was prepared in the Final OSA PEIR, which considered the development of the project's proposed land uses. As stated in the OSA PEIR, the IRWD has indicated that it is able to provide adequate water supplies to the project.[16] According to the Area Plan, the existing regional facilities, which are capable of providing service to the project site, include two existing 12-inch domestic water lines, beneath Indian Ocean Drive and Biscayne Bay Drive. In order to reach the project site, approximately 300 linear feet of mainline pipeline would need to be constructed.

Sewer service to the project site would be provided by IRWD. According to the Area Plan, the proposed project's average daily wastewater generation would be approximately 150,000 gallons. The project alternative's average daily wastewater generation would be approximately 160,000 gallons. System hydraulics and facility planning would be based on the SAMP. Future regional facilities located near PA-19, which will flow to the southerly corner of the project site include a proposed 8" sewer line to be constructed to the west of Serrano Creek, in accordance with the SAMP. . Per IRWD standards and the Lake Forest Area SAMP, the project would require the installation of on and off-site transmission eight-inch sewer mains. . It is proposed that the project will utilize the eight-inch sewer main on the west side of Serrano Creek.

It is also anticipated that the project would utilize reclaimed water for non-potable uses, such as irrigation. The projected water usage would be approximately 33 gallons per minute or 47,500 gallons per day. The proposed project would include the construction of a "reclaimed" (non-potable) water system to be supplied through existing pipelines along Indian Ocean Drive and Biscayne Bay Drive. Approximately 800 feet of off-site 4-inch diameter pipeline would be required along Indian Ocean Drive to access the development. All on-site pipelines would be 4" in diameter.

The project proposes the necessary water and wastewater facilities to serve the proposed development, the construction of which is not anticipated to be substantial. Also, project implementation would not result in the need for the expansion of existing facilities. Impacts in this regard would be less than significant and this topic will not be further analyzed in the EIR.

[16] EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.15-29.

4.17(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?

Less Than Significant Impact. Increased demand on drainage facilities would occur with development of the project site. However, the project proposes a comprehensive system intended to collect, convey, and deliver storm flows in accordance with City and County requirements. The primary goal of the stormwater management system is to prevent flooding and protect property by providing safe and effective site drainage.

Four drainage areas ranging from two to 59 acres would be included on the project site. Serrano Creek, adjacent to the southeast of the project site, provides existing regional storm drainage facilities. The proposed on-site stormwater management system generally consists of terrace drains, down drains, outlet structures, parkway culverts, earthen swales, area drainage systems, underground piping, catch basins, manholes, junction structures, and energy dissipaters. Three detention basins are also proposed on the project site. Implementation of the proposed storm drain system would follow the project site's existing drainage patterns toward Serrano Creek. Thus, project implementation would result in minimal interruption of drainage at the site as a result of proposed drainage facilities and would not require the expansion of existing facilities. Impacts would be less than significant and this topic will not be further analyzed in the EIR.

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

Less Than Significant Impact. Refer to Response 4.17(b). Future development of the project site would increase water demand. A Water Supply Assessment was prepared in the Final OSA PEIR, which considered the development of the project's proposed land uses. As stated in the OSA PEIR, the IRWD has indicated that it is able to provide adequate water supplies to the project. The project proposes the necessary water facilities to serve the project site, the construction of which is not anticipated to be substantial. Also, project implementation would not result in the need for the expansion of existing water facilities. Thus, the IRWD would have sufficient water supplies available to serve the project and no new or expanded entitlements are needed. Impacts would be less than significant and this topic will not be further analyzed in the EIR.

4.17(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?

Less Than Significant Impact. Refer to Response 4.17(b). The IRWD has adequate capacity to treat the wastewater generated by the project, in addition to the provider's existing commitments. Impacts would be less than significant and this topic will not be further analyzed in the EIR.

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

Less Than Significant 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 increase in solid waste from the OSA, which includes project site, would not exceed the permitted daily capacity of any of the three landfills.[17] Therefore, the project would not cause an exceedance in landfill capacity. A less than significant impact would occur and this topic will not be further analyzed in the EIR.

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

Less Than Significant Impact. The project would be required to comply with Federal, State, and local statutes and regulations related to solid waste. A less than significant impact would occur and this topic will not be further analyzed in the EIR.

[17]EIP Associates, *City of Lake Forest Opportunities Study Final Program EIR*, May 23, 2008, Page 3.15-30.

4.18 MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?		✓		
b. Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	✓			
c. 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)?	✓			
d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	✓			

Impact Analysis

4.18(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?

Less Than Significant Impact With Mitigation Incorporated. The project site currently consists of vacant land, the existing IRWD facility, and Serrano Creek. For the proposed project, vacant lands would be replaced with residential, recreational, and civic center uses. For the project alternative, vacant lands would be replaced with residential and recreational uses. The project area includes special status plant and wildlife species and sensitive habitats. However, pursuant to the recommended mitigation measures, the project would be required to comply with the Conservation Guidelines for coastal sage scrub and the NCCP/HCP provisions for sensitive species. As a result, impacts in this regard would be reduced to less than significant levels after implementation of recommended Mitigation Measures.

Based on the OSA PEIR, no historically/culturally significant structures are identified within a half-mile radius of the project site. Therefore, development within the project site would not impact historic resources. Figure RR-6 of the General Plan indicates that the project site is located within an area of potential archeological resources. Additionally, the OSA PEIR

identified 12 archaeological sites within the OSA. Implementation of recommended Mitigation Measures would reduce potentially significant impacts to archeological resources to less than significant levels by requiring assessment, avoidance or data recovery, and monitoring of construction activities by a qualified archeologist. Also, construction activities could potentially affect paleontological resources. Recommended Mitigation Measures would reduce these impacts by minimizing the potential for damage and ensuring that any resources would be appropriately evaluated by a qualified paleontologist. Impacts in this regard would be reduced to less than significant levels with implementation of recommended Mitigation Measures.

It is hereby found that the project would result in less than significant impacts, either individually or cumulatively, on wildlife and cultural resources with implementation of recommended Mitigation Measures.

4.18(b) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?

Potentially Significant Impact. Implementation of the proposed project would result in the development of vacant land into residential, recreational, and civic center uses. Implementation of the project alternative would result in the development of vacant land into residential and recreational uses. Project development would constitute a long-term commitment to urban use. It is unlikely that circumstances would arise that would justify the return of the land to its original condition. A variety of resources (including land, energy, water, construction materials, and human resources) would be irretrievably committed for the project's initial construction, infrastructure, installation, and connection to the existing utilities, on-going buildout, and continued maintenance.

Construction of the project would require the commitment of other nonrenewable or slowly renewable nature resources as well (e.g., lumber and other forest products, sand and gravel, asphalt, petrochemicals, and metals). Additionally, a variety of resources would be committed to on-going maintenance for the life of the project. An increase in the intensity of land use on the project site would result in an increase in regional energy consumption, including electricity and gasoline associated with the initial project construction and the transport of people. In addition, construction of new roadways would generally commit future generations to similar uses of fossil fuels by constructing roadways and utility infrastructure in a previously undeveloped area. Therefore, based on the highly-varied nature of potential environmental changes, this issue will be discussed further in the Global Climate Change and the CEQA Appendix F, Energy Conservation, analyses within the EIR.

4.18(c) 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)?

Potentially Significant Impact. It is noted that future upgrades to the existing IRWD facility are currently being considered at this location. These future upgrades are subject to CEQA, in accordance with the provisions of Section 15168 of the *CEQA Guidelines*, as determined by the lead agency. Upon project-specific environmental review, the proposed Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 would be considered as part of the required

cumulative analysis. This Initial Study has determined that the project would not result in cumulatively considerable environmental impacts for the topic areas analyzed, with the exception of air quality and global climate change impacts. Potential cumulative considerations for other approved, planned, and reasonably foreseeable projects in the area (including the on-site IRWD facility) in addition to the project will be further evaluated in the EIR for those topic areas considered to be potentially significant.

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

Potentially Significant Impact. Previous sections of this Initial Study reviewed the project's potential impacts related to hazards, noise, biological resources, geology and soils, and other issues. As concluded in these previous discussions, the project would result in less than significant environmental impacts with implementation of the recommended mitigation measures, with the exception to air quality and greenhouse gas emissions. The project could potentially cause substantial adverse impacts on human beings, such as through short-term air quality or aesthetic/light and glare impacts or indirect impacts as a result of greenhouse gas emissions. These impacts will be further evaluated in the EIR in order to determine the significance.

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5.0 INVENTORY OF MITIGATION MEASURES

AESTHETICS

AES-1 Prior to issuance of a precise grading permit for the project, the applicant shall submit a photometric plan to the Development Services Department for review and approval. The plan shall specify the following:

d. 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. 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.

e. All interior floodlights, lighting and advertising (including signage), and other security lighting shall be directed away from adjacent uses and towards the specific location intended for illumination. All lighting shall be shielded to minimize the production of glare and light spill off-site. Landscape illumination and exterior sign lighting shall be accomplished with low-level unobtrusive fixtures.

f. The plan shall include the types and appearance of proposed residential light standards. (Source: OSA PEIR Mitigation Measure MM 3.1-1 to 3.1-4)

BIOLOGICAL RESOURCES

BIO-1 Prior to the issuance of a grading permit, the Applicant shall conduct biological field surveys of the project area for sensitive plant and wildlife species potentially occurring on the project site that were not surveyed in the *Biological Reports*. The IRWD study area shall be surveyed for the following special status plant and wildlife species:

Special Status Plants
- Catalina Mariposa Lily *(Calochortus catalinae)*;
- Western dichondra *(Dichondra occidentalis)*;
- Palmer's grapplinghook (*Harpagonella palmeri*);
- Mesa Horkelia (*Horkelia cuneata ssp. Puberula*);
- Robinson's peppergrass (*Lepidium virginicum var. Robinsonii*);
- Golden-flowered Pentachaeta (*Pentachaeta aurea*);
- Chaparral rein orchid (*Piperia cooperi*); and
- Rayless raywort (*Senecio aphanactis*).

Special Status Wildlife
- Coast (San Diego) horned lizard (*Phrynosoma coronatum (blainvillei)*);
- Coronado skink (*Eumeces skiltonianus interparietalis*);
- Coastal western whiptail (*Cnemidophorus tigris stejnegeri*);
- Orange-throated whiptail (*Cnemidophorus hyperytha*);

- Silvery legless lizard (*Anniella pulchra pulchra*);
- Coastal rosy boa (*Charina trivirgata roseofusca*);
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*);
- Northern red-diamond rattlesnake (*Crotalus ruber ruber*);
- Northern harrier (*Circus cyaneus*);
- White-tailed kite (*Elanus leucurus*);
- Sharp-shinned hawk (*Accipiter striatus*);
- Ferruginous hawk (*Buteo regalis*);
- Golden eagle (*Aquila chrysaetos*);
- Burrowing owl (*Athene cunicularia*);
- Short-eared owl (*Asio flammeus*);
- Long-eared owl (*Asio otus*);
- Rufous hummingbird (*Selasphorus rufus*);
- Loggerhead shrike (*Lanius ludovicianus*);
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*);
- Lawrence's goldfinch (*Carduelis lawrencei*);
- California leaf-nosed bat (*Macrotus californicus*);
- Pallid bat (*Antrozous pallidus*);
- Yuma myotis (*Myotis yumanensis*);
- California (Western) mastiff bat (*Eumops perotis californicus*);
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*);
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*);
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*);
- San Diego desert woodrat (*Neotoma lepida intermedia*);
- Ramona grasshopper mouse (*Onychomys torridus Ramona*); and
- American badger (*Taxidea taxus*).

Also, Planning Areas 13 and 17 shall be surveyed for the following special status wildlife species:

- Coast (San Diego) horned lizard (*Phrynosoma coronatum (blainvillei)*);
- Orange-throated whiptail (*Cnemidophorus hyperytha*);
- Silvery legless lizard (*Anniella pulchra pulchra*);
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*);
- Northern red-diamond rattlesnake (*Crotalus ruber rubber*);
- Coast range newt (*Taricha torosa torosa*);
- Two-striped garter snake (*Thamnophis hammondii*);
- Northern harrier *(Circus cyaneus*);
- White-tailed kite (*Elanus leucurus*);
- Golden eagle (*Aquila chrysaetos*);
- Long-eared owl (*Asio otus*);
- Western red bat (*Lasiurus blossevilli*);
- Big free-tailed bat (*Nyctinomops macrotis*);
- Pallid bat (*Antrozous pallidus*);
- California (Western) mastiff bat (*Eumops perotis californicus*);
- San Diego desert woodrat (*Neotoma lepida intermedia*).

Surveys shall be conducted in accordance with current California Department of Fish and Game (CDFG) or United States Fish and Wildlife Services (USFWS) survey protocols for the target species by a qualified biologist or botanist, in order to determine their presence or absence at the project site. (Source: OSA PEIR Mitigation Measure MM 3.4-1)

BIO-2 Prior to the issuance of a grading permit, the Applicant shall conform and comply with the applicable requirements of the Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), including the payment of the appropriate in-lieu fee to mitigate for the loss of coastal sage scrub and any other NCCP/HCP covered habitat and species observed on the IRWD study area and Planning Areas 13 and 17, and during the additional surveys required under Mitigation Measure BIO-1.

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 coastal sage scrub habitat that is occupied by nesting gnatcatchers shall 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 United States Fish and Wildlife Services/California Department of Fish and Game (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 coastal sage scrub Identified Species that are not otherwise flushed and shall carry out the following measures, to the extent 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 coastal sage scrub 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 shall 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 coastal sage scrub. The landowner or relevant public agency/utility will advise USFWS/CDFG at least seven (7) calendar days (and preferably 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 shall 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 shall 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 shall 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 coastal sage scrub habitat to be avoided by construction equipment and personnel shall be marked with temporary fencing or other appropriate markers clearly visible to construction personnel. No construction access, parking, or storage of equipment or materials shall be permitted within such marked areas.

5. Coastal sage scrub 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. (Source: OSA PEIR Mitigation Measure MM 3.4-2)

BIO-3 Prior to the issuance of a grading permit, the Applicant shall, in an area where a species or habitat is not covered by the Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) has been identified, comply with the requirements of the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA), if applicable. If the species or habitat is not protected under FESA or CESA, but is otherwise protected through the Migratory Bird Treaty Act or other similar regulatory requirement, the Applicant shall provide suitable replacement habitat at a minimum of 1:1, and shall prepare and submit a mitigation plan for City approval that demonstrates that the replacement habitat is protected in perpetuity and that appropriate long-term habitat management is provided. The mitigation plan must be prepared in consultation with and receive the approval of the agency regulating the species or habitat. The mitigation plan shall provide for among other things, biological monitoring during grading activities, and fencing of any habitat area that would not be disturbed by construction. (Source: OSA PEIR Mitigation Measure MM 3.4-3)

BIO-4 Prior to the approval of grading plans, the Applicant would be required to prepare an application for fill of waters subject to the Army Corps of Engineers (ACOE) jurisdiction. If appropriate, a streambed alteration agreement shall be obtained from California Department of Fish and Game (CDFG). The Applicant shall submit an application to the Regional Water Quality Control Board (RWQCB) for a waste discharge requirement or waiver of waste discharge requirement. The Applicant shall also consider any other permits from the ACOE, CDFG, RWQCB, or any other applicable regulatory agency that may be necessary. (Source: OSA PEIR Mitigation Measure MM 3.4-4)

BIO-5 To the extent feasible, all vegetation removal activities shall be scheduled outside the nesting season (typically February 15 to August 15) to avoid potential impacts to nesting birds. However, if initial vegetation removal occurs during the nesting season, all suitable habitat shall be thoroughly surveyed for the presence of nesting birds by a qualified biologist prior to commencement of clearing. If any active nests are detected, a buffer of at least 100 feet (300 feet for raptors) shall be delineated, flagged, and avoided until the nesting cycle is complete as determined by the biological monitor to minimize impacts. (Source: OSA PEIR Mitigation Measure MM 3.4.2)

CULTURAL RESOURCES

CUL-1 Prior to the 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 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 examination 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 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. (Source: OSA PEIR Mitigation Measure MM 3.5-1)

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

CUL-3 Artifacts recovered shall be prepared, identified, and cataloged 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. (Source: OSA PEIR Mitigation Measure MM 3.5-3)

CUL-4 The qualified archaeologist retained shall prepare a final report to be filed with the site developer(s) and the City of Lake Forest. The qualified archaeologist retained 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. (Source: OSA PEIR Mitigation Measure MM 3.5-4)

CUL-5 Prior to issuance of a grading permit, a qualified paleontologist shall be retained by the site developer(s) to provide professional paleontological services. 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. (Source: OSA PEIR Mitigation Measure MM 3.5-5)

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

CUL-7 Fossils recovered shall be prepared, identified, and cataloged before donation to the accredited repository designated by the City of Lake Forest. (Source: OSA PEIR Mitigation Measure MM 3.5-7)

CUL-8 The qualified paleontologist retained 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. (Source: OSA PEIR Mitigation Measure MM 3.5-8)

GEOLOGY AND SOILS

GEO-1 Prior to approval of grading plans, the project shall adhere to geotechnical recommendations outlined in Chapter 4.0, General Recommendations, of the *Geotechnical Exploration Report*, prepared by Leighton and Associates, Inc., dated January 11, 2010. Recommendations shall be noted on project grading plans and building specifications for the proposed Tentative Tract Map and any future projects proposed within the Area Plan. Grading plans and building specifications shall be reviewed and approved by the Building Official. (Source: OSA PEIR, Legal Requirements for Geology, Soils and Mineral Resources)

HAZARDS AND HAZARDOUS MATERIALS

HAZ-1 Prior to demolition activities, an asbestos survey shall be conducted by a qualified environmental professional to determine the presence or absence of asbestos. If present, asbestos removal shall be performed by a State-certified asbestos

containment contractor in accordance with the Toxic Substance Control Act (TSCA), (15 U.S.C. Section 2601 et. seq.) Title 2 – Asbestos Hazard Emergency Response for handling asbestos. (Source: OSA PEIR, Legal Requirements for Hazards and Hazardous Materials)

HAZ-2 If during demolition of the structures, paint is separated from the building material (e.g., chemically or physically), the paint waste shall be evaluated independently from the building material by a qualified environmental professional to determine its proper management. According to the Department of Toxic Substances Control, if paint is not removed from the building material during demolition (and is not chipping or peeling), the material may be disposed of as construction debris (a non-hazardous waste). The landfill operator shall be contacted in advance to determine any specific requirements they may have regarding the disposal of lead-based paint materials, if necessary. (Source: OSA PEIR, Legal Requirements for Hazards and Hazardous Materials)

HAZ-3 Prior to issuance of a grading permit, soil sampling shall occur within the portions of the project site that have historically been utilized for agricultural purposes and may contain pesticide residues in the soil, as determined by a qualified Phase II specialist. The sampling shall determine if pesticide concentrations exceed established regulatory requirements and shall identify further site characterization and remedial activities, if necessary. (Source: OSA PEIR, Legal Requirements for Hazards and Hazardous Materials)

HAZ-4 At least three business days prior to any lane closure, the construction contractor shall notify the Orange County Sheriff's Department (OCSD) and Orange County Fire Authority (OCFA), along with the Development Services Department, of construction activities that would impede movement (such as road or lane closures) along roadways immediately adjacent to the development area, to allow for uninterrupted emergency access and maintenance of evacuation routes. (Source: OSA PEIR MM 3.7-3)

HYDROLOGY AND WATER QUALITY

HYD-1 All City landscape contractors and project developers shall be required, as part of their contract, to submit to the City a landscape design plan include the following elements:

- Maximized use of climate-appropriate 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; and
- Minimal use of fertilizers and pesticides. (Source: OSA PEIR Mitigation Measure MM 3.8-2)

HYD-2 Prior to the issuance of a grading permit, the Applicant shall be required to coordinate with the Nitrogen and Selenium Working Group in order to establish eligibility for the *de minimus* permit implemented by the Santa Ana Regional Water Quality Control Board. (Source: OSA PEIR Mitigation Measure MM 3.8-3)

HYD-3 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.ord /html/wurmp_sanluis_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 non-chemical controls (see the City of San Francisco's Integrated Pest Management Program for example at http://www.sfgov.org/site/frame.asp?u= http://www.sfwater.org/). These plans shall be approved by the City prior to issuance of a grading permit. (Source: OSA PEIR Mitigation Measure MM 3.8-4)

NOISE

NOI-1 Prior to grading permit issuance, the construction contractor shall demonstrate, to the satisfaction of the City of Lake Forest Development Services Department, the following:

- Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices.

- Construction noise reduction methods such as shutting off idling equipment, maximizing the distance between construction equipment staging areas and nearby occupied uses, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.

- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receptors.

- The construction contractor shall submit a haul plan to the City, and the City shall ensure the planned haul truck routes avoid residential areas to the extent feasible.

- All construction entrances shall clearly post construction hours, allowable workdays, and the phone number of the job superintendent. This will allow surrounding owners to contact the job superintendent with concerns. If the contractor receives a noise-related complaint, appropriate corrective actions shall be implemented and a report taken indicating the action with a copy of the report provided to the reporting party upon request.

- The construction contractor shall change the timing and/or sequence of the noisiest construction operations to avoid sensitive times of the day.

- Construction activities shall be prohibited between 8:00 PM and 7:00 AM the following day from Monday through Saturday, and no construction shall be permitted on Sundays and Federal holidays. Construction noise during the allowed construction time periods shall be exempt from the noise level provisions in the Noise Control Ordinance.

(Source: as modified from OSA PEIR Mitigation Measure MM 3.10-1)

NOI-2 The project applicant shall require by contract specifications that construction staging areas and earthmoving equipment shall be located as far away from vibration and noise sensitive sites as possible. Should construction activities take place within 25 feet of an occupied structure, a project specific vibration impact analysis shall be conducted. The vibration impact analysis shall provide measures for minimizing vibration impacts that exceed 85 VdB. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit. (Source: as modified from OSA PEIR Mitigation Measure MM 3.10-1)

PUBLIC SERVICES

PUB-1 Prior to approval of Tentative Tract Map No. 17331, the site developers shall enter into a Secured Fire Protection Agreement with OCFA that shall ensure an adequate level of service is maintained in the City. (Source: as modified from OSA PEIR Mitigation Measure MM 3.12-2)

6.0 REFERENCES

The following references were utilized during preparation of this Initial Study. These documents are available for review at the City of Lake Forest, 25550 Commercentre Drive, Lake Forest, California 92630 or accessed at the indicated web page.

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4. California Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report*, August 2000, http://minerals.usgs.gov/minerals/pubs/state/980601mp.pdf, accessed April 2010.

5. California Environmental Quality Act, 1970, as amended, Public Resources Code Sections 21000-21178, http://ceres.ca.gov/ceqa/.

6. California State Office of Planning and Research, *Noise Element Guidelines*, October 2003, http://www.opr.ca.gov/planning/publications/General_Plan_Guidelines_2003.pdf.

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20. LSA Associates, Inc., *Serrano Summit Noise Impact Analysis*, December 2009.

21. LSA Associates, Inc. Serrano Summit Air Quality Analysis, December 2009.

22. Official Website of the City of Lake Forest, http://www.lakeforestca.gov/, accessed April 2010.

23. PCR Services Corporation, *Biological Constraints Analysis Memorandum*, May 27, 2008.

24. PCR Services Corporation, *Coastal California Gnatcatcher Surveys Memorandum*, September 2, 2008.

25. PCR Services Corporation, *Investigation of Jurisdictional Wetlands and Waters of the U.S.*, May 2008.

26. PCR Services Corporation, *Least Bell's Vireo Surveys Memorandum*, August 26, 2008.

27. PCR Services Corporation, *Sensitive Plant Surveys Memorandum*, August 26, 2008.

28. PCR Services Corporation, *Southwestern Willow Flycatcher Surveys Memorandum*, September 9, 2008.

29. United States Environmental Protection Agency, *Noise Effects Handbook – A Desk Reference to Health and Welfare Effects of Noise*, October 1979, revised July 1981, http://www.nonoise.org/library/handbook/handbook.htm.