THE PRESERVE AT SAN JUAN

Draft Environmental Impact Report

SCH # 2006051110

EIR No. 618

May 2017

County of Orange Planning and Development
300 North Flower
Street Santa Ana, CA 92703-5000

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Acronyms Used in this Report

AB	Assembly Bill
ADT	average daily trips
AFY	acre feet per year
APS	alternative planning strategy
AQMP	air quality management plan
ARB	California Air Resources Board
ASCE	American Society of Civil Engineers
ATCM	airborne toxics control measure
BACT	best available control technology
Basin	South Coast Air Basin
BAU	business as usual
BEHAVE	Fire Behavior Analysis
BIOS	Biogeographic Information and Observation System
BMPs	best management practices
CAA	Federal Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
CAC	California Administrative Code
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CALINE4	California Line Source Dispersion Model
CALRecycle	California Department of Resources, Recycling and Recovery
Caltrans	California Department of Transportation
CBC	California Building Code
CC&R	Declaration of Covenants, Conditions and Restrictions
CCAA	California Clean Air Act
CCAT	California Climate Action Team
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act

CFC/IFC	California Fire Code/International Fire Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CHL	California Historical Landmarks
CHP	California Highway Patrol
CNDDB	California Natural Diversity Database
CMP	Congestion Management Plan
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO2e	CO_2 equivalent
County	County of Orange
CPUC	California Public Utilities Commission
CWA	Clean Water Act
CWC	California Water Code
CWQMP	Conceptual Water Quality Management Plan
DAMP	Drainage Area Management Plan
dB	decibel
dBA	A-weighted decibels
DPR	Department of Parks and Recreation
du/ac	dwelling units per acre
EFZ	Elsinore Fault Zone
EIR	Environmental Impact Report
EVMWD	Elsinore Valley Municipal Water District
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
F/TSP	Foothill Trabuco Specific Plan
g	gravity
GHG	greenhouse gas
GMP	Growth Management Plan

gpd	gallons per day
GVW	gross vehicle weight
HAPS	hazardous air pollutants
HCD	California Department of Housing and Community Development
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbons
HOA	homeowners association
HRI	Historic Resources Inventory
HVAC	heating ventilation and air conditioning
IBC	International Building Code
ICU	Intersection Capacity Utilization
ITE	Institute of Transportation Engineers
KBTU	thousand British Thermal Units
lbs/day	pounds per day
LCFS	low carbon fuel standard
Ldn	day-night average noise level
Leq	energy-equivalent noise level
LID	low impact development
LIP	local implementation plan
LOS	level of service
LST	localized significance threshold
LVW	loaded vehicle weight
M	Richter magnitude
MACT	maximum achievable control technology
MBTA	Migratory Bird Treaty Act
MMT	million metric tons
mpg	miles per gallon
MPOs	Metropolitan Planning Organization
MS4	municipal storm sewer system
Mw	maximum magnitude
MWh	megawatt hours
MWD	Metropolitan Water District
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards

NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plans
NEHRP	National Earthquake Hazards Reduction Program
NESHAP	national emissions standards for hazardous air pollutants
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHTSA	Department of Transportation's National Highway Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NTS	Natural Treatment System
OCFA	Orange County Fire Authority
OCPLAS	Orange County Public Library System
OCTA	Orange County Transportation Authority
OCSD	Orange County Sheriff Department
OCVCD	Orange County Vector Control District
OCWR	Orange County Waste and Recycling
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OHWM	ordinary high water mark
OPR	California Office of Planning and Research
PFC	perfluorocarbons
PGA	peak ground acceleration
PHI	Points of Historical Interest
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
PRC	Public Resources Code
Psi	pounds per square inch
PTSF	percent time spent following
QCB	Quino checkerspot butterfly
RHNA	Regional Housing Needs Assessment
ROWD	report of waste discharge
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board

SAF	San Andreas Fault
SAMP	Sub Area Master Plans
SB	Senate Bill
SCE	Southern California Edison
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCS	sustainable communities' strategy
SDC	Seismic Design Category
SF_6	sulfur hexafluoride
SFHAs	Special Flood Hazard Areas
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SO_2	sulfur dioxide
SQDV	Storm Water Quality Design Volume
SR	State Route
SRA	State Responsibility Areas
SWANCC	Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SVUSD	Saddleback Valley Unified School District
TAC	toxic air contaminant
TCWD	Trabuco Canyon Water District
TIM	Transportation Implementation Manual
tpd	tons per day
tpy	tons per year
UAR	Upper Aliso Residential
UBC	Uniform Building Code
USACOE	U.S. Army Corp of Engineers
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
v/c	volume to capacity

VRP	Vector Reduction Program
WDRs	Waste Discharge Requirements
WMOC	Waste Management of Orange County
WQMP	Water Quality Management Plan
WWTP	wastewater treatment plant

CHAPTER 1
Introduction/Summary

This Draft Environmental Impact Report (EIR) evaluates the environmental effects that may result from the construction of the proposed residential development. This EIR has been prepared in conformance with state and County of Orange environmental policy guidelines for implementation of the California Environmental Quality Act (CEQA).

1.1 Introduction

The proposed project site consists of two non-contiguous parcels of private property located in the southeastern portion of unincorporated Orange County in the Santa Ana mountains. The parcels are located to the west of Ortega Highway, and separated by Long Canyon Road.

The project is approximately 1,500 feet west of El Cariso Village, a small rural residential area, six miles southwest of the City of Lake Elsinore in Riverside County, and approximately 6.25 miles east of the City of Rancho Santa Margarita in Orange County.

Phase 1 (south parcel) is approximately 389.6 acres and the Phase 2 (north parcel) is 194.5 acres. Throughout this EIR, the location of the proposed project will be referred to as the project site, and generally refers to both Phase 1 (south parcel) and Phase 2 (north parcel) unless explicitly stated.

1.2 Background

Development on the project site has been the subject of ongoing environmental review related to proposed developments since 2006. On May 22, 2006, a Notice of Preparation (NOP) and Initial Study were distributed to the State Clearinghouse (SCH), interested agencies, and the public for a 30-day public review period. The SCH issued a project number for the previous EIR (No. 2006051110) and a public scoping meeting was held on June 1, 2006. Between circulation of the NOP in 2006 and August 2008, the project applicant reduced the proposed number of single-family residential units from 213 to a maximum of 169 single-family. As a result, the NOP was re-issued and another public scoping meeting was held on August 18, 2008. Prior to circulation of the Draft EIR in October 2008, the project applicant decided to suspend the project in response to a downturn in the residential housing market.

Then in 2013, the project was redesigned to be smaller, and no longer proposes residential units within Riverside County, amongst other project revisions. A NOP and Initial Study was prepared and distributed for a 30-day public review period on September 26, 2013. However, pursuant to changes to the project description that involved the number of residential units and wastewater

systems, a revised NOP and Initial Study was circulated for a 30-day public review starting on October 16, 2014.

1.3 Project Summary

The project applicant, the Preserve at San Juan, LLC, proposes to develop 72 single-family residential lots under a proposed Rural Residential 1A General Plan Land Use Designation and a proposed AR "Agricultural Residential" zoning. The project would include large areas of open space, and would be developed in two phases (Phase 1 (south parcel), and Phase 2 (north parcel)).

Phase 1 (south parcel) would develop 43 single-family residences and Phase 2 (north parcel) would develop 29 single-family residences. The total project area of both phases includes 584.1 acres, and the project proposes improvements on 169.5 of those acres. The remaining 414.6 acres (71 percent of the project area) would remain undeveloped open space.

1.4 Alternatives

CEQA requires that "*an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project…*" (*CEQA Guidelines*, Section 15126.6 (a)). The discussion must focus on alternatives to the project or its location which are capable of lessening significant impacts, even if these alternatives would impede to some degree the attainment of project objectives, or be more costly (Section 15126.6 (b)). The EIR is required to briefly describe the rationale for selecting the alternatives to be discussed and also identify any alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process.

The specific alternative of "No Project" shall be evaluated along with its impact. If the "No Project" alternative is determined to be the environmentally superior alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. Alternatives analyzed in the EIR include the following:

- **Alternative 1 – No Project/No Build Alternative:** under this alternative, no development would occur on the project site, and it would remain in its current condition.
- **Alternative 2 – Decreased Density Single Phase:** under this alternative, a reduction in the number of residential units would occur by not developing Phase 1 (south parcel). Phase 2 (north parcel) would be developed with 29 residential units, as planned by the proposed project, and the Phase 1 (south parcel) would remain as open space. This alternative would decrease the number of residential units developed in the project area by 43 units, or approximately 60 percent.
- **Alternative 3 – Decreased Density Both Phases**: under this alternative, a 50 percent reduction in the number of residential units would be built in each phase. Thus, 22 single-family residences would be developed in Phase 1 (south parcel) and 14 single-family residences would be developed in Phase 2 (north parcel). This alternative would decrease

the number of residential units developed in the project area by 36 units, and provide a larger area of open space on each parcel.

Other alternatives that were considered but rejected include selling the project site for conservation purposes (due to this not meeting any project objectives) and an alternative site for the project (due to the fact that there are no alternative sites within the control of the project applicant, and that in the event land could be purchased of suitable size and developmental characteristics, it would likely have similar impacts after mitigation as the project).

1.5 Environmental Procedures

Purpose of an EIR

In accordance with *CEQA Guidelines* Section 15121(a), the purpose of an EIR is to serve as an informational document that will generally inform public agency decision makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. *CEQA Guidelines* Section 15151 contains the following standards for EIR adequacy:

> *"An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure."*

An EIR is an informational document for use by decision makers and the public in their review of the potential impacts of a proposed project, as well as in the evaluation of alternatives and mitigation measures which may minimize, or eliminate those impacts. As such, this document includes a full discussion of the project description, the existing environmental setting, environmental impacts, mitigation measures, and residual impacts that may exist after mitigation has been implemented, and project alternatives that could alleviate potential impacts.

To gain the most value from this report certain key points recommended in the *CEQA Guidelines* should be kept in mind:

- This report should be used as a tool to give the reader an overview of the possible ramifications of the proposed project and the non-clustered scenario. It is designed as an "early warning system" with regard to potential environmental impacts and subsequent effects on the local community's natural resources.
- A specific environmental impact is not necessarily irreversible or permanent. Incorporating changes recommended in this report during the design and construction

phases of project development can wholly or partially mitigate impacts, particularly in more developed urban areas.

As the public agency with the authority to approve or deny the project, the County will consider the information in the EIR along with other information before taking any action on the project. The conclusions of the EIR regarding environmental impacts do not control the County's discretion to approve, deny or modify the proposed project, but instead are presented as information intended to aid the decision-making process.

The purpose of this EIR is to provide an objective, full-disclosure document to inform agency decision makers and the general public of the direct and indirect environmental impacts of the proposed project, and related actions. This is a "Project" EIR in conformance with Section 15161 of the *CEQA Guidelines*, in that it examines the environmental impacts associated with a specific development project. The primary purpose of this EIR is to:

- Identify and evaluate potential environmental consequences of the proposed project.
- Assess cumulative impacts of the project in conjunction with related past, present, and reasonably foreseeable future projects within the area.
- Indicate the manner in which those environmental consequences can be mitigated or avoided.
- Define and analyze alternatives that have the potential to reduce or eliminate potentially significant impacts associated with the proposed project or non-clustered scenario.
- Identify impacts, if any, that even with the implementation of mitigation measures would be unavoidable and adverse.
- Provide documentation supporting these determinations.

Environmental Process

Initial Studies/Notice of Preparations

The environmental analysis of the proposed project was initiated by the County with the preparation of an Initial Study. A Notice of Preparation (NOP) was prepared and distributed with the Initial Study for a 30-day public review period, which commenced on September 26, 2013. In addition, a revised NOP and Initial Study was circulated for a 30-day public review starting on October 16, 2014 in response to changes in the project description related to the number of residential units and wastewater treatment systems. A copy of the NOP/Initial Study, Revised NOP/Initial Study, and copies of comments received in response to both are included as Appendix A1 and A2 of this EIR.

Section 15123(b)(2) of the *CEQA Guidelines* requires that an EIR summary identify areas of controversy known to the lead agency, including issues raised by other agencies and the public. **Tables 1-1 and 1-2** identify those who submitted written comments on the NOPs/Initial Studies and topics raised by the commenters, and also provides a reference to the section of the EIR in which these issues are evaluated. None of the comments received are considered controversial, and all environmental issues raised are discussed within this EIR.

TABLE 1-1
NOP TOPICS RAISED

Commenter/Date	Summary of Comment	EIR Section
Soboba Band of Luiseno Indians October 26, 2013	Information and consultation request; cultural resource sensitivity.	Section 3.4, *Cultural*
Department of Transportation, District 12 October 25, 2013	Phase 1 Highway 74 accessibility; appropriate traffic analyses and mitigation for traffic impacts.	Section 3.14, *Traffic*
Pechange Band of Luiseno Indians October 25, 2013	Information and consultation/involvement request; cultural resource sensitivity; cumulative cultural resource impacts; growth-inducing impacts; air quality effects.	Section 3.2, *Air Quality;* Section 3.4, *Cultural*
Local Agency Formation Commission October 24, 2013	Efficiency and reliability of public services; annexation clarification.	Chapter 2, *Project Description*; Section 3.15, *Utilities*
Linda Hoffman October 17, 2013	Night skies, traffic congestion, Native American artifacts, storm water drainage, water supply, wildlife and hunting grounds.	Section 3.1, *Aesthetics*; Section 3.3, *Biological Resources;* Section 3.4, *Cultural*; Section 3.8, *Hydrology*; Section 3.14, *Traffic*
Barbara Mitchell October 17, 2013	Traffic impacts at Long Canyon Road, Native American artifacts, population increase, soil and climate.	Section 3.3, *Biological Resources;* Section 3.4, *Cultural*; Section 3.14, *Traffic*;
South Coast Air Quality Management District October 11, 2013	Air quality impacts, methodology, thresholds, and data sources.	Section 3.2, *Air Quality*
Southern California Gas Company October 7, 2013	Extension of new natural gas service, cultural or biological field monitoring.	Section 3.15, *Utilities*; Section 3.4, *Cultural*; Section 3.3, *Biological Resources*
SCH September 26, 2013	General NOP Distribution.	None

TABLE 1-2
REVISED NOP TOPICS RAISED

Commenter/Date	Summary of Comment	EIR Section
California Department of Fish and Wildlife December 1, 2014	Information and consultation/involvement request; biological resources.	Section 3.4, *Biological Resources*
Metropolitan Water District December 1, 2014	DEIR should include a statement on the proposed annexation to Metropolitan, WMWD, MWDOC and LAFCO.	Section 2.0, *Project Description* and Section 3.16, *Utilities*
Pechanga Band of Luiseno Mission Indians November 26, 2014	Information and consultation/involvement request; cultural resource sensitivity; cumulative cultural resource impacts; growth-inducing impacts; air quality effects.	Section 3.2, *Air Quality;* Section 3.5, *Cultural*

Commenter/Date	Summary of Comment	EIR Section
United States Department of the Interior November 26, 2014	Information and consultation request; biological resources.	Section 3.4, *Biological Resources*
Department of Transportation, District 12 November 25, 2014	A Traffic Impact Study is necessary to determine the near and long term impacts to State facilities. Coordinate with District 8 for work performed within Caltrans ROW.	Section 3.14, *Traffic*
Orange County Fire Authority November 17, 2014	Information and consultation/involvement request; fire services, fire hazard zones, and response times.	Section 3.13, *Public Services*
Department of Transportation, District 8 November 14, 2014	Recommendation of appropriate traffic analyses and mitigation for traffic impacts.	Section 3.14, *Traffic*
Rincon Band of Luiseno Indians November 6, 2014	Information and consultation/involvement request; significance of cultural resources.	Section 3.5, *Cultural*
Native American Heritage Commission November 6, 2014	Information and consultation/involvement request; significance of historical resources.	Section 3.5, *Cultural*
South Coast Air Quality Control District November 4, 2014	Information and consultation request related to air quality and greenhouse gas analyses, modeling and health risk assessment files.	Section 3.3, *Air Quality*
State Clearinghouse September 26, 2013	General NOP Distribution.	None

In addition to distribution of the NOPs/Initial Studies, two public scoping meetings were held at Hell's Kitchen (32685 Ortega Highway, Lake Elsinore) on October 16, 2013 and November 13, 2014, from 4:45 p.m. to 6:45 p.m. to introduce the proposed project to the community, and to provide an opportunity for the public to submit verbal and written comments and recommendations regarding the issues to be addressed in the EIR. Notification of the meeting included a direct mailing of the notice to public agencies and the surrounding community. A list of comments (both verbal and written) given at the scoping meetings are included in **Table 1-3** below, along with a reference to the chapter or section of the EIR in which these issues are evaluated.

TABLE 1-3
COMMENTS RAISED AT SCOPING MEETINGS

Summary of Comment	EIR Section
What is the background of the concept for the proposed project, and how will it fit into the existing in the project area?	Chapter 2.0, *Project Description,* Section 3.1, *Aesthetics*
Is there public access to the project site?	Chapter 2.0, *Project Description,* Section 3.14, *Traffic*
There should be allowance for an equestrian lifestyle, including public equestrian trails.	Chapter 2.0, *Project Description*
Is it the developer who owns the land or is it U.S. Forest Service land?	Chapter 2.0, *Project Description*
Where is the location of the secondary access road?	Chapter 2.0, *Project Description,* Section 3.14, *Traffic*
Will there be reinstallation of the historic USGS monument?	Chapter 2.0, *Project Description*
What is the role of Orange County versus the role of Riverside County? How does this pertain to road improvements in Riverside County?	Chapter 2.0, *Project Description;* Section 3.14, *Traffic*
What are the impacts of light pollution and impacts to star gazing activities?	Section 3.1, *Aesthetics*
Suggests using orange lighting equipment that does not radiate light back up at the sky after being cast downwards.	Section 3.1, *Aesthetics*
Would there be potential interruption to wildlife migration routes?	Section 3.3, *Biology*
There would be disruption to an existing viewing spot for wild deer near private property.	Section 3.3, *Biology*
Verify potential impacts to rock art and nearby burial grounds.	Section 3.4, *Cultural*
Suggests that an ethnographic study should be done.	Section 3.4, *Cultural*
Suggests that a Native American monitor should be able to be present on site at all times.	Section 3.4, *Cultural*
What is the extent of the proposed road widening, and what is the effect on soil erosion?	Section 3.5, *Geology and Soils*
Would there be increased flooding and increased creek depth from implementation of the proposed project?	Section 3.8, *Hydrology*
The Riverside County Fire Department will respond to fire calls, although the project site is within Orange County boundaries.	Section 3.12, *Public Services*
Would there be increased traffic impacts?	Section 3.14, *Traffic*
Describe the deceleration lanes?	Section 3.14, *Traffic*
Will pipelines supplying the project be new or would the existing pipelines be used?	Chapter 2.0, *Project Description,* Section 3.15, *Utilities*
Please verify the Los Caberos development and the proposed 500kV transmission line for the Nevada Hydro company.	Chapter 2.0, *Project Description*

a Note: “Los Caberos” housing development and Nevada Hydro Company 500 kV transmission line were both mentioned at October 16 scoping meeting. ESA could not locate any information regarding Los Caberos online. The proposed 500 kV transmission line was dismissed by the CPUC in 2012, and there is no application for the project currently present before the CPUC. Therefore, it cannot be considered as a proposed project under CEQA. Additional details can be found at this website: http://www.cpuc.ca.gov/environment/info/aspen/nevadahydro/talega_escondido_valley_serrano.htm.

Draft EIR

Based on the Initial Studies and the scoping meetings, the following environmental issues were identified for evaluation in the EIR:

- Aesthetics (Section 3.1)
- Agriculture and forest resources (Section 3.2)
- Air quality (Section 3.3)
- Biological resources (Section 3.4)
- Cultural/scientific resources (Section 3.5)
- Geology and soils (Section 3.6)
- Greenhouse gas emissions (Section 3.7)
- Hazards and hazardous materials (Section 3.8)
- Hydrology and water quality (Section 3.9)
- Land use and planning (Section 3.10)
- Noise (Section 3.11)
- Population and housing (Section 3.12)
- Public services (Section 3.13)
- Recreation (Section 3.14)
- Transportation and traffic (Section 3.15)
- Utilities and service systems (Section 3.16)

As discussed in the Initial Studies there are no mining or significant mineral deposits within the project site; impacts to mineral resources would not occur (see Appendices A1 and A2 of this EIR). Therefore, this issue is not discussed further in this EIR.

This Draft EIR has been distributed to affected agencies, surrounding cities, counties, and interested parties for a 45-day review period in accordance with Section 15087 of the *CEQA Guidelines*. During the review period, from May 24, 2017 through July 7, 2017, the Draft EIR is available for general public review at the following locations:

- OC Public Works, Development Services/Planning, 300 N. Flower Street, Santa Ana 92703
- Mission Viejo Branch Library: 100 Civic Center, Mission Viejo 92691
- El Toro Branch Library: 24672 Raymond Ave, Lake Forest 92630
- Rancho Santa Margarita Branch Library: 30902 La Promesa Drive, Rancho Santa Margarita 92688
- Silverado Branch Library: 28192 Silverado Canyon Road, Silverado 92676
- Lakeside Library: 32593 Riverside Drive, Lake Elsinore 92530

Additionally, the Draft EIR can be downloaded or reviewed via the Internet at:
http://www.ocpublicworks.com/ds/planning/projects/the_preserve_at_san_juan

Interested parties may provide written comments on the Draft EIR. Written comments on the Draft EIR should be addressed to:

Kevin Shannon, Contract Planner
OC Public Works
OC Development Services/Planning
300 N. Flower Street
Santa Ana, CA 92703
Kevin.Shannon@ocpw.ocgov.com

Final EIR

Upon completion of the 45-day public review period, written responses to comments on environmental issues discussed in the Draft EIR will be prepared and incorporated into the Final EIR. These comments, and their responses, will be included in the Final EIR for consideration by the Orange County Planning Commission and Board of Supervisors, as well as other public decision makers.

1.6 Draft EIR Organization

As illustrated in **Table 1-4**, this EIR is organized into nine chapters each dealing with a separate aspect of the required content of an EIR as described in the *CEQA Guidelines*; it is intended for use and reference. To help the reader locate information of particular interest, a brief summary of the contents of each chapter of the EIR is provided. Acronyms and abbreviations are included directly after the Table of Contents and provide a description of abbreviations and acronyms used throughout the document. The following chapters are contained within the EIR:

TABLE 1-4
REQUIRED DRAFT EIR CONTENTS

Requirement (CEQA Guidelines Section)	Location in EIR
Table of contents (Section 15122)	Table of Contents
Summary (Section 15123)	Chapter 1.0
Project description (Section 15124) and environmental setting (Section 15125)	Chapter 2.0 and Chapter 3.0 (Sections 3.1 – 3.16)
Significant environmental impacts (Section 15126.2(a))	Chapter 3.0 (Sections 3.1 – 3.16); Chapter 4.0
Unavoidable significant environmental impacts (Section 15126.2(b))	Chapter 3.0 (Sections 3.1 – 3.16); Chapter 4.0
Mitigation measures (Section 15126.4)	Chapter 1.0; Chapter 3.0 (Sections 3.1 – 3.16)
Cumulative impacts (Section 15130)	Chapter 3.0 (Sections 3.1 – 3.16)
Alternatives to the proposed project (Section 15126.6)	Chapter 5.0
Growth-inducing impacts (Section 15126.2(d))	Chapter 8.0
Effects found not to be significant (Section 15128)	Chapter 3.0 (Sections 3.1 – 3.16); Chapter 6.0
Organizations and persons consulted (Section 15129)	Chapter 9.0
List of preparers (Section 15129)	Chapter 9.0

Chapter 1.0 – Introduction/Summary: This chapter provides an overview of the purpose and use of the EIR, the scope of this EIR, the environmental review process for the EIR and the project, and the general format of the document. This chapter also contains a summary of the proposed project, environmental impacts, proposed mitigation, and level of significance after mitigation. Also, contained within this section is a summary description of project alternatives.

Chapter 2.0 – Project Description: This chapter defines the project location, describes the proposed project, the Project Design Features, benefits of the project, and outlines the project objectives.

Chapter 3.0 – Environmental Setting, Impacts and Mitigation Measures: This chapter describes and evaluates the environmental issue areas, including the existing environmental setting and background, applicable environmental thresholds, environmental impacts, policy considerations related to the particular environmental issue area under analysis, mitigation measures capable of minimizing environmental harm, and a discussion of cumulative impacts.

Prior to considering mitigation to lessen environmental impacts associated with the proposed project, CEQA encourages the avoidance of impacts. Optimally, environmental impacts can be either eliminated or substantially reduced by the project design. In addition to design considerations that avoid or reduce impacts, numerous existing regulatory requirements serve to mitigate the environmental impacts of a project. The significance evaluation for each environmental issue area in the EIR (Chapter 3.0), first considers the significance of an impact upon incorporation of Project Design Features and compliance with regulatory requirements. If upon implementation of these measures and requirements, an impact is less than significant, additional mitigation is not required pursuant to CEQA. If additional mitigation is required, such measures are recommended. The following outlines the mitigation structure included in Chapter 3.0 of this EIR:

- **Project Design Features** (PDFs) are specific applicant-initiated design features that are incorporated as part of the project to avoid and/or minimize potential environmental impacts. The PDFs will be included in the EIR's Mitigation Monitoring and Reporting Program (MMRP) to ensure implementation and appropriate monitoring of each PDF. These features are listed in Chapter 2.0, *Project Description*, and discussed within each sub-sections of Chapter 3.0 to describe how these features would to avoid, reduce, or offset potential impacts.
- **Mitigation Measures** are required by CEQA for projects that would otherwise cause significant impacts (*CEQA Guidelines* Section 15126.4). This EIR includes mitigation measures for potential impacts that would not be reduced or eliminated by a combination of Project Design Features and compliance with regulatory requirements.

Chapter 4.0 – Significant Impacts: The significant impacts of the proposed project are analyzed in Chapter 3.0 are summarized in this chapter.

Chapter 5.0 – Alternatives Analysis: This chapter analyzes feasible alternatives to the proposed project, including the Alternative 1: No Project/No Build, Alternative 2: Decreased Density Single Phase, and Alternative 3: Decreased Density Both Phases, as described above.

Chapter 6.0 – Impacts Found Not to be Significant: This chapter summarizes the impacts found to less than significant for the proposed project.

Chapter 7.0 – Significant Irreversible Changes: This chapter identifies any irreversible changes to the natural environment resulting associated with the proposed project.

Chapter 8.0 – Growth Inducing Impacts: This chapter provides a summary of the proposed project's potential growth-inducing impacts.

Chapter 9.0 – References/Report Preparation: This chapter identifies all references used and cited in the preparation of this report and lists those who prepared the analysis.

Appendices: Data supporting the analysis or content of the EIR are provided in the appendices to the document. These include the two NOPs/Initial Studies and responses received, biological reports, geotechnical reports, hydrology reports, traffic report, and other technical reports prepared for the project.

1.7 Summary of Impacts

Impacts and mitigation measures associated with the proposed project are summarized in **Table 1-5**. As shown, project impacts associated with aesthetics and construction noise would remain significant and unavoidable even after incorporation of mitigation measures. These impacts would require the adoption of a Statement of Overriding Considerations during project approval. The details of the Project Design Features listed in Table 1-5 below, are provided in Table 2-6, Project Design Features, in Section 2.0, *Project Description*.

TABLE 1-5
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
3.1 Aesthetics				
Impact 3.1-1: Would implementation of the proposed project could have a substantial adverse effect on a scenic vista?	PDF-1, PDF-2, PDF-3, PDF-4, PDF-5.	Significant and unavoidable	**MM 3.1-1:** The project's design plans shall state that exterior paint colors for the residential and associated structures are limited to a palette of earthy tones that shall be provided for homeowners to choose from to ensure that project structures blend into the natural surroundings. Exterior paint options shall be included in the CR&Rs; and managed, approved, and enforced by the Homeowner's Association.	Significant and unavoidable
Impact 3.1-2: Would implementation of the proposed project could substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?		No impact	None required.	No impact
Impact 3.1-3: Would implementation of the proposed project could substantially degrade the existing visual character or quality of the site and its surroundings	PDF-1, PDF-2 PDF-3, PDF-4, PDF-5, PDF-6, PDF-9, PDF-19.	Significant and unavoidable	**MM 3.1-1**: Listed above under Impact 3.1-1.	Significant and unavoidable
Impact 3.1-4: Would implementation of the proposed project could create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	PDF-20	Less than significant	**MM 3.1-2:** Prior to the issuance of building permits, the applicant shall demonstrate that all exterior lighting has been designed and located so that all direct rays are confined to the development areas of the project site in a manner meeting the approval of the County's Building and Safety Department.	Less than significant
Cumulative	PDF-1, PDF-2 PDF-3, PDF-4, PDF-5, PDF-6, PDF-9, PDF-19, PDF-20.	Less than significant	None required.	Less than significant
3.2 Agriculture and Forestry Resources				
Impact 3.2-1: Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?		No impact	None required.	No impact
Impact 3.2-2: Would the project result in the loss of forest land or conversion of forest land to non-forest use?	PDF-1, PDF-2, PDF-20.	No impact	None required.	No impact

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Cumulative			None required.	No Impact
3.3 Air Quality				
Impact 3.3-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?		Less than significant	None required.	Less than significant
Impact 3.3-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation.		Less than significant	None required.	Less than significant
Impact 3.3-3: Would the project 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).		Less than significant	None required.	Less than significant
Impact 3.3-4: Would the project expose sensitive receptors to substantial pollutant concentrations?		Less than significant	None required.	Less than significant
Cumulative		Less than significant	None required.	Less than significant
3.4 Biological Resources				
Impact 3.4-1: Would implementation of the proposed project could 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 Wildlife or U.S. Fish and Wildlife Service?	PDF-1, PDF-2, PDF-13, PDF-14, PDF-17, PDF-20.	Potentially significant	**MM 3.4-1:** Environmental Awareness Programs: The project's construction plans and grading specifications shall state that the construction contractor shall implement the following measures: • The applicant shall prepare a *Worker Environmental Awareness Program* that shall be administered to all on-site personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. The program shall be implemented during site preconstruction and construction, and shall: 1. Be developed by or in consultation with the County approved biologist and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all workers;	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, and explain the reasons for protecting these resources; 3. Describe the temporary and permanent habitat protection measures to be implemented at the project site; 4. Identify whom to contact if there are further comments and questions about the material discussed in the program; and 5. Include a training acknowledge form to be signed by each worker indicating they received training and shall abide by the guidelines. • The applicant shall implement a *Resident Environmental Awareness Program* intended to increase awareness to residents of the sensitive plants, wildlife and associated habitats that occur in the preserved open space areas. The intention of the program shall be to encourage active conservation efforts among the residents to help conserve the habitats in the preserved open space. The program shall address inadvertent impacts from the introduction of invasive plant species (including "escapees"). At a minimum, the program shall include the following components: 1. Informational kiosks shall be constructed at entrance points to hiking trails and at various locations along the fence line that separates the project site and the open space area to inform residents and trail users on the sensitive flora and fauna that rely on the habitats found within the preserved open space and the importance of staying on trails within open space areas. 2. The applicant shall provide residents or the Homeowners Association with a brochure which includes a list of plant species to avoid in residential landscaping to prevent the introduction of invasive plant species to the surrounding natural communities.	

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			MM 3.4-2: Best Management Practices for Biological Resources – Construction. The project's construction plans and grading specifications shall state that prior to and during construction, the following shall apply: • The project impact footprint shall be staked and fenced (e.g., with orange snow fencing, silt fencing or a material that is clearly visible) by a surveyor and the boundary shall be confirmed by a qualified biological monitor. The construction site manager shall ensure that the fencing is maintained for the duration of construction and that any required repairs are completed in a timely manner. • Maintenance activities shall not commence until 7:00 a.m. and shall be completed before dusk each day. • If any common wildlife is encountered during maintenance activities, the common wildlife shall be allowed to leave the work area unharmed and shall be flushed or herded in a safe direction away from the work area(s). • Qualified biological monitor(s) shall be on-site during all vegetation removal activities to flush any common wildlife within the project impact footprint away from work areas. • Any open trenches shall be covered at the end of each work day in a manner to prevent the entrapment of wildlife, or adequately ramped to provide an animal escape route. • If nighttime maintenance is required, lighting shall be shielded and focused downward and away from undisturbed areas and shall be limited to the minimum amount necessary to complete the maintenance activities. • Staging or storage areas shall be located a minimum of 300 feet from any drainage. • Any equipment or vehicles driven and/or operated within or adjacent to ponded or flowing water within any drainage shall be checked and maintained daily, to prevent leaks of materials that could be harmful to aquatic species. • All vehicles and equipment shall be maintained in proper working condition to minimize fugitive emissions and accidental spills from motor oil,	

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			hydraulic fluid, grease, or other fluids or hazardous materials. All fuel or hazardous waste leaks, spills, or releases shall be stopped or repaired immediately with drip pans in place and cleaned up at the time of occurrence. However, no vehicle or equipment maintenance shall occur within 300 feet of any drainage. All spill material removed shall be contained and disposed of at an appropriate off-site landfill. Maintenance vehicles shall carry appropriate equipment and materials to isolate and remediate leaks or spills, such as a spill containment kit. • Stationary equipment such as motors, pumps, or generators, located within or adjacent to ponded or flowing water within drainages shall be positioned over drip pans. • No equipment maintenance shall be done within or adjacent to ponded or flowing water within drainages where petroleum products or other pollutants from the equipment may enter into the water. • No waste, cement, concrete, asphalt, paint, oil, or any other substances used during maintenance activities which could be hazardous to aquatic life, or other organic or earthen material, shall be allowed to contaminate the soil and/or enter into or be placed where it may be washed by rainfall or runoff into ponded or flowing water within any drainages. Any of these materials placed where they may affect ponded or flowing water shall be removed immediately upon observation. When operations are completed, any excess non-native materials shall be removed from the work area. Only the use of native materials is expected to recontour existing baseline conditions (i.e., no non-native fill will be introduced to the open space areas). • All litter and pollutions laws shall be followed. If trash receptacles are provided within or near the work areas they shall be wildlife-proof. • All exposed/disturbed areas shall be stabilized to the greatest extent possible using appropriate, industry standard erosion control measures.	

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			• No maintenance activities shall occur during active precipitation. If any precipitation is forecasted, the work area shall be secured at least one day prior so no materials enter or wash into any drainages. **MM 3.4-3:** Sensitive Wildlife. The project's construction plans and grading specifications shall state that to avoid direct impacts to sensitive wildlife, a pre-construction survey shall be conducted within three days of proposed impacts by a qualified biologist. If it is determined by the biologist during the pre-construction survey that sensitive wildlife is present and thus may be impacted, no construction shall be allowed to occur in the immediate area until the individual(s) are relocated to an adjacent area that contains suitable habitat. A biological monitor shall be present during any ground disturbance activities within or immediately adjacent to habitat of sensitive wildlife species. The California Department of Fish and Wildlife shall be consulted prior to relocating any sensitive wildlife species. CDFW may require a sensitive wildlife relocation plan be prepared and approved prior to relocating any sensitive wildlife. If required by the California Department of Fish and Wildlife, the plan shall include methods for trapping, handling and relocating all sensitive wildlife and shall identify areas that are suitable for relocation. Suitable relocation habitats shall include areas containing proper soils, host plants, and moisture conditions favorable for long-term survival of the sensitive wildlife, and relocation areas shall be sufficient in size for introducing new individuals so that overpopulation does not occur. **MM 3.4-4:** Sensitive Insects. The project's construction plans and grading specifications shall state that as required by the updated U.S. Fish and Wildlife Service protocol, a preconstruction habitat assessment shall be conducted by a certified Quino checkerspot butterfly biologist in coordination with the U.S. Fish and Wildlife Service. A site assessment shall be conducted by a qualified Quino checkerspot butterfly biologist to determine if the project site contains areas where surveying for	

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			Quino checkerspot butterfly is recommended. Recommended Quino checkerspot butterfly survey areas include all areas that do not fall under "Excluded Areas" outlined in U.S. Fish and Wildlife Service protocol, regardless of the presence or absence of QCB host plants or nectar sources. If it is determined by the habitat assessment and/or coordination with the U.S. Fish and Wildlife Service that focused surveys are needed and Quino checkerspot butterfly are found within the study area, any potentially significant impacts to Quino checkerspot butterfly habitat shall be mitigated at a minimum 1:1 mitigation-to-impact ratio, subject to approval by the U.S. Fish and Wildlife Service through Section 7 consultation. Appropriate mitigation includes one or more of the following measures: • On- and/or off-site preservation of Quino checkerspot butterfly habitat; • On- and/or off-site creation, restoration, and/or enhancement of Quino checkerspot butterfly habitat, including the preparation of a habitat mitigation and monitoring plan; and/or • Payment into a conservation bank or other comparable mitigation banking mechanism (e.g., in-lieu fee program, Pre-Approved Mitigation Area, etc.).	
Impact 3.4-2: Would implementation of the proposed project could 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 Wildlife or U.S. Fish and Wildlife Service?	PDF-1, PDF-2, PDF-17, PDF-20.	Potentially significant	**MM 3.4-5:** Sensitive Plant Communities. Measures to off-set impacts to coast live oak woodland and coast live oak forest shall include one (or a combination) of the following mitigation measures (which are detailed in the Tree Management and Preservation Plan for the project: • Preservation of the 26.5 acres of preserved coast live oak woodland and 4.4 acres of coast live oak forest in perpetuity under a conservation easement, deed restriction, or other appropriate mechanism. • Individual coast live oak trees within fuel modification zones, off-site impact areas, and temporary impact areas shall be protected and preserved in-place, and coast live oak trees located within the fuel modification zones that require pruning shall comply with Orange	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			County Fire Authority requirements. Trees shall be pruned by a qualified arborist with experience specializing in the management and care of this tree species in consultation with the County Biological Resources Monitor and in accordance with the guidelines published by the National Arborist Association. In no case shall more than 20 percent of the tree canopy of any oak tree be removed. • The applicant shall plant trees, seedlings, and onsite-collected acorns within the landscaped portion of the proposed development as well as within the onsite oak woodlands to be preserved as open space. Trees shall be replaced at a minimum of 3:1 replacement ratio, with the possibility of up to 12:1 should all acorns/seedlings survive. All trees and seedlings shall be from a local source indigenous to the immediate area. • Prior to the issuance of any grading permits, the applicant shall obtain the approval of a tree preservation plan for the project by the Manager of OC Planning. The Manager of OC Parks is to be consulted if the plan involves any off-site tree mitigation at an OC Parks facility. • A five-year monitoring program shall be prepared that includes performance standards and criteria for evaluating success. Impacts to southern willow scrub shall be mitigated at a minimum ratio of 2:1, as directed by the California Department of Fish and Wildlife, and include one, or a combination of, the following: • Onsite creation, enhancement, or restoration; • Offsite creation, enhancement, or restoration; • Offsite acquisition and preservation; • Purchase of credits at an agency-approved mitigation bank; and/or • Payment into an in-lieu fee agreement. A monitoring plan shall accompany the creation, restoration, and/or enhancement of sensitive plan communities. The plan shall focus on the provision of equivalent habitats within disturbed habitat areas of the study area and/or offsite (e.g., this may include, but is not limited to, removal of non-native and/or invasive species; salvage/dispersal of native	

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			duff and seed bank; transplantation, seeding, and/or planting/staking). In addition, the plan shall provide details as to the implementation of the plan, maintenance, and future monitoring to ensure success.	
Impact 3.4-3: Would implementation of the proposed project could 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?	PDF-13, PDF-14, PDF-17.	Potentially significant	**MM 3.4-6:** Jurisdictional Waters. The project's construction plans and grading specifications shall state that the applicant shall provide on- and/or off-site replacement and/or enhancement of existing U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife jurisdictional waters and wetlands. Riparian/riverine habitat shall be mitigated at a minimum ratio of 1:1 for unvegetated/upland areas and 2:1 for areas supporting riparian vegetation. Impacts to jurisdictional resources may be compensated through payment into an in-lieu fee program or approved mitigation bank through coordination with the U.S. Army Corps of Engineers. If creation, restoration, and/or enhancement is to occur on-site and/or off-site, a mitigation and monitoring plan shall be prepared and subject to the approval of these regulating agencies. The plan shall describe the location of mitigation and provide details as to the implementation of the plan, success criteria, maintenance, and monitoring for a three-year period following construction.	Less than significant
Impact 3.4-4: Would implementation of the proposed project could 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?	PDF-1, PDF-2.	Potentially significant	**MM 3.4-1**: Listed above under Impact 3.4-1. **MM 3.4-2**: Listed above under Impact 3.4-1. **MM 3.4-7:** Nesting Bird Surveys. The project's construction plans and grading specifications shall state that all vegetation clearing for construction and fuel modification shall occur outside of the breeding bird season (fall and winter), between September 1 and February 14 to reduce the potential to impact an active nest. If clearing and/or grading activities cannot be avoided during the breeding season, all suitable habitats shall be thoroughly surveyed for the presence of nesting birds by a qualified biologist prior to and initial ground disturbing activities. Suitable nesting habitat on the project site includes grassland, scrub, chaparral, and woodland communities. If any active nests are detected, the area shall be flagged, along with a 300-foot buffer	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			for passerine species or 500 feet for raptors (or appropriate buffer as determined by the monitoring biologist), and shall be avoided until the nesting cycle is complete or it is determined by the biological monitor that the chicks have fledged the nest and the nest is no longer active.	
Impact 3.4-5: Would implementation of the proposed project could conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	PDF-1, PDF-5, PDF-22.	Potentially significant	**MM 3.4-5**: Listed above under Impact 3.4-2.	Less than significant
Impact 3.4-6: Would implementation of the proposed project could conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	PDF-1, PDF-2, PDF-4, PDF-13, PDF-14, PDF-17, PDF-20.	Potentially significant	**MM 3.4-8:** Compliance with Section 6.1.2 of the MSHCP – Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools. In accordance with Section 6.1.2 of the MSHCP, a Determination of Biologically Equivalent or Superior Preservation shall be prepared and submitted to the Environmental Programs Division The Determination of Biologically Equivalent or Superior Preservation shall include an analysis of alternatives that demonstrates efforts that first avoid direct and indirect effects to MSHCP Riparian/Riverine habitat; if avoidance is not feasible, the Determination of Biologically Equivalent or Superior Preservation shall include alternatives that would minimize potential effects. If an avoidance alternative is selected, the project shall ensure the long-term conservation of the avoided Riparian/Riverine habitat through the use of deed restrictions, conservation easements, or other appropriate mechanisms. If an avoidance alternative is not feasible, the Determination of Biologically Equivalent or Superior Preservation shall include measures to ensure the replacement of any lost functions and values of Riparian/Riverine habitat. Riparian/Riverine habitat shall be mitigated at a minimum ratio of 1:1 for unvegetated/upland areas and 2:1 for areas supporting riparian vegetation. Measures shall include one, or a combination of, the following: • Onsite creation, enhancement, or restoration; • Off-site creation, enhancement, or restoration; • Off-site acquisition and preservation; • Purchase of credits at an agency-approved	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			mitigation bank; and/or • Payment into an in-lieu fee agreement.	
Cumulative	PDF-1, PDF-2, PDF-5, PDF-13, PDF-14, PDF-17, PDF-20, PDF-22.	Less than significant	None required.	Less than significant
3.5 Cultural/Scientific Resources				
Impacts 3.5-1 and 3.5-2: Would the project result in a substantial adverse change in the significance of a historical or archaeological resource, as defined in CEQA Guidelines Section 15064.5?	PDF-1, PDF-2.	Potentially significant	**MM 3.5-1:** Prior to the issuance of a grading permit, the applicant/developer shall provide written evidence to the County Building and Safety Division that a qualified archaeologist has been retained to address the potential discovery of unanticipated archaeological discoveries. In addition, written evidence must be provided that Native American monitors shall be allowed to monitor earthmoving activity related to the project. In the event that archaeological materials, including stone tools, shells, bones, glass shards, ceramics, or other materials older than 50 years in age, are encountered during ground-disturbing activities, work in the immediate vicinity of the resource shall cease until a qualified archaeologist has assessed the discovery and appropriate treatment pursuant to CEQA Guidelines Section 15064.5 is determined. If archaeological resources are found to be significant, the archaeologist shall determine, in consultation with the County and local Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Per CEQA Guidelines Section 15126.4(b)(3), preservation in place shall be the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and local Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			treated in accordance with the provisions of Section 21083.2. **MM 3.5-2:** Prior to the issuance of a grading permit, a Cultural Resources Monitoring Plan shall be prepared by a qualified archaeologist in consultation with the County and local Native American groups expressing interest. The plan shall identify the location and timing of cultural resources monitoring. Monitoring would occur in areas most likely to contain resources, such as valleys and canyons. The plan shall allow the qualified archaeologist, based on observations of subsurface soil stratigraphy or other factors during initial grading, and in consultation with the Native American monitor and the lead agency, to reduce or discontinue monitoring as warranted if the archaeologist determines that the possibility of encountering archaeological deposits is low. The plan shall provide the appropriate measures to be followed in the event of unanticipated discovery of a cultural resource consistent with *CEQA Guidelines* Section 15126.4(b)(3), as well as identify the appropriate data recovery methods and procedures to reduce or eliminate the effect of the project if avoidance of significant historical or unique archaeological resources is determined to be infeasible. The plan shall also include reporting of monitoring results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals. The plan shall be submitted to the County Department of Building and Safety for review and approval prior to the issuance of a grading permit and any resulting archaeological requirements shall be incorporated into all development plans and included on project permits.	
Impact 3.5-3: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	PDF-1, PDF-2.	Potentially significant	**MM 3.5-3:** Prior to the issuance of a grading permit, the applicant/developer shall provide written evidence to the County Department of Building and Safety that a qualified paleontologist has been retained to respond on an as-needed basis to address unanticipated paleontological discoveries, and the paleontological requirements shall be incorporated into all development plans submitted and included as conditions of approval. In the event	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			that paleontological resources are encountered during grading and construction operations, all construction activities shall be halted or redirected to provide for the qualified paleontologist to assess the find for significance and, if necessary, develop a paleontological resources impact mitigation plan (PRIMP) for the review and approval by the County prior to resuming construction activities.	
Impact 3.5-4: Would the project disturb human remains, including those interred outside of formal cemeteries?	PDF-1, PDF-2.	Less than significant	None required.	Less than significant
Cumulative	PDF-1, PDF-2.	Less than significant	Implement Mitigation Measures MM 3.5-1 through MM 3.5-3.	Less than significant
3.6 Geology and Soils				
Impact 3.6-1: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?		Potentially significant	**MM 3.6-1:** Prior to the issuance of a grading permit, the applicant shall have a qualified civil engineer prepare final grading plans and a Final Geotechnical Assessment in conformance with the California Building Code, County Grading and Excavation Code, that shall be approved by the County's Building and Safety Department.	Less than significant
Impact 3.6-2: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking and landslides?	PDF-10	Potentially significant	**MM 3.6-1**: Listed above under Impact 3.6-1.	Less than significant
Impact 3.6-3: Would the project result in substantial soil erosion or the loss of topsoil?	PDF-4, PDF-13, PDF-14, PDF-15, PDF-16, PDF-17	Potentially significant	**MM 3.9-1**: Listed above under Impact 3.9-1.	Less than significant
Impact 3.6-4: Would the project 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 lateral spreading or collapse?		Potentially significant	**MM 3.6-1**: Listed above under Impact 3.6-1.	Less than significant
Impact 3.6-5: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal system where sewers are not available for the disposal of waste water?		Potentially significant	**MM 3.6-2:** The project operator shall design and operate the onsite wastewater treatment systems in accordance with the SWRCB adopted Resolution No. 2012-0032—the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of On-site Wastewater Treatment Systems (specifically Tier 2 of this Policy requiring Orange County	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			Department of Public Works to oversee the design and approval of the systems); the Orange County On-site Sewage Absorption System Guidelines; and the County Regulations for Wastewater Treatment and Disposal Systems, which include minimum horizontal setback requirements from geologic and water features. All septic tanks, biofilters and reuse water pump station/emergency storage tanks shall be setback a minimum of five feet from structures, property lines and the top of descending slopes. The project operator shall obtain approval from the County for issuance of building permits for and operation of onsite wastewater treatment systems. **MM 3.6-3:** The Home Owners Association (HOA) shall provide detailed information via flyers and meetings to project residents regarding the proper use and maintenance necessary to keep onsite wastewater treatment systems functioning properly. In addition, information regarding County-registered HOA approved liquid waste haulers shall be provided to project site residents.	
Cumulative	PDF-4, PDF-10, PDF-13, PDF-14, PDF-15, PDF-16, PDF-17	Less than significant	None required.	Less than significant
3.7 Greenhouse Gas Emissions				
Impact 3.7.1: Would the project generate significant amounts of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	PDF-4	Less than significant	None required.	Less than significant
Impact 3.7.2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	PDF-1, PDF-4.	Less than significant	None required.	Less than significant
Cumulative	PDF-1, PDF-4.	Less than significant	None required.	Less than significant
3.8 Hazards and Hazardous Materials				
Impact 3.8-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		Less than significant	None required.	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.8-2: Would the project 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?		Potentially significant	**MM 3.8-1:** Prior to issuance of grading permits for Phase 2 (north parcel), a Site Management Plan (SMP) shall be prepared by a qualified hazardous materials consultant and shall detail procedures and protocols for management of onsite hazardous materials, including: • A certified hazardous waste hauler shall remove all potentially hazardous materials, wastes, trash pit debris, and abandoned dilapidated vehicles, which shall be disposed of at an appropriate solid waste facility based on the content of the materials. All recyclable materials shall be separated and disposed of at a recycling facility. Hazardous materials shall be transported per California Hazardous Waste Regulations to a landfill permitted by the state to accept hazardous materials. • After removal of the potentially hazardous materials soils samples shall be taken at the airport hangar/maintenance area, storage shed, bunker, vehicle storage areas, trash pits, and at other debris areas to identify any contaminated soils with concentrations above worker safety thresholds established by the Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs). Any samples identified to exceed the RWQCB ESL limits shall be characterized, removed, and disposed of off-site at a licensed hazardous materials disposal facility according to California Hazardous Waste Regulations. A report of the findings shall be provided to the County for review and approval prior to issuance of grading permits for the Phase 2 (north parcel). • Any subsurface materials exposed during construction activities that appear suspect of contamination, either from visual staining or suspect odors, shall require immediate cessation of excavation activities. Soils suspected of contamination shall be segregated from other soils to be tested for potential contamination. If contamination is found to be present Environmental Screening Levels (ESLs), any further proposed groundbreaking activities within	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			areas of identified or suspected contamination shall be conducted according to California Hazardous Waste Regulations. • A Health and Safety Plan (HSP) shall be prepared for each contractor that addresses potential safety and health hazards and includes the requirements and procedures for employee protection. The HSP shall also outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction. • All SMP measures shall be printed on the construction documents, contracts, and project plans prior to issuance of grading permits.	
Impact 3.8-3: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	PDF-10 and PDF-11.	Less than significant	None required.	Less than significant
Impact 3.8-4: Would the project 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?	PDF-10, PDF-11.	Potentially significant	**MM 3.13-1**: Listed below under Impact 3.13-1.	Less than significant
Cumulative	PDF-10, PDF-11.		None required.	Less than significant
3.9 Hydrology and Water Quality				
Impact 3.9-1: Would implementation of the proposed project violate water quality standards or waste discharge requirements?	PDF-1, PDF-2, PDF-3, PDF-4, PDF-6, PDF-13, PDF-14, PDF-15, PDF-16, PDF-17,	Potentially significant	**MM 3.6-2**: Listed above under Impact 3.6-5. **MM 3.6-3:** Listed above under Impact 3.6-5. **MM 3.9-1:** Prior to the issuance of any grading or building permits, the project operator shall demonstrate compliance under California's General Permit for Stormwater Discharges Associated with Construction Activity by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) Number; or other proof of filing in a manner meeting the satisfaction of the Manager, Permit Services. Projects subject to	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			this requirement shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). A copy of the current SWPPP shall be kept at the project site and be available for County review upon request.	
Impact 3.9-2: Would implementation of the proposed project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level (e.g., the production rate of the 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)?	PDF-1, PDF-2, PDF-4, PDF-6, PDF-13, PDF-14, PDF-15.	Less than significant	None required.	Less than significant
Impact 3.9-3: Would implementation of the proposed project 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, siltation or flooding on- or off-site?	PDF-1, PDF-2, PDF-3, PDF-13, PDF-14, PDF-15.	Potentially significant	**MM 3.9-1**: Listed above under Impact 3.9-1.	Less than significant
Impact 3.9-4: Would implementation of the proposed project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	PDF-1, PDF-2, PDF-3, PDF-4, PDF-6, PDF-13, PDF-14, PDF-15, PDF-17.	Potentially significant	**MM 3.9-1**: Listed above under Impact 3.9-1.	Less than significant
Impact 3.9-5: Would implementation of the proposed project otherwise substantially degrade water quality?		Potentially significant	**MM 3.6-2** Listed above under Impact 3.6-5. **MM 3.6-3**: Listed above under Impact 3.6-5.	Less than significant
Cumulative	PDF-1, PDF-2, PDF-3, PDF-4, PDF-6, PDF-13, PDF-14, PDF-15, PDF-16, PDF-17	Less than significant	None required.	Less than significant
3.10 Land Use and Planning				
Impact 3.10.1: Would the project 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	PDF-1, PDF-2, PDF-3.	Less than significant	None required.	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				
Cumulative		Less than significant	None required.	Less than significant
3.11 Noise				
Impact 3.11-1: Would the project expose 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?	PDF-21	Significant and unavoidable (construction) Less than significant (operation)	**MM 3.11-1:** The project's construction plans and grading specifications shall state that temporary sound barriers shall be installed between the location of construction activities and the closest residences during construction activities that could exceed noise limits. The temporary sound barriers shall remain in place until the conclusion of demolition, grading, and construction activities that could exceed noise limits. The design of the sound barrier will be: • At least 14-feet in height above grade; • located such that it will break the line-of-sight between the sound source and the receiver; • Consist of an impervious material with a minimum surface density of 4 pounds per square foot; • Not have any gaps or holes between the panels or at the bottom; and • A minimum weight of two pounds per square foot with no gaps or perforations. **MM 3.11-2:** The project's construction plans and grading specifications shall state that the project construction contractor shall post signs at the construction sites that are legible at a distance of 50-feet and two weeks prior to the commencement of construction of the project, the project proponent shall send a notice to the off-site residential uses located within a 0.5-mile radius from the project boundaries. All notices and signs shall provide the dates and duration of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints. **MM 3.11-3:** The project's construction plans and grading specifications shall state that the construction contractor shall establish a "noise disturbance coordinator" who shall be responsible	Significant and unavoidable (construction) Less than significant (operation)

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable measures such that the complaint is resolved. All notices that are sent to residential units within 0.5-mile radius from the project boundaries and all signs posted at the construction site shall list the telephone number for the disturbance coordinator.	
Impact 3.11-2: Would the project expose persons to, or generation of, excessive groundborne vibration or groundborne noise levels?		Less than significant	None required.	Less than significant
Impact 3.11-3: Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		Less than significant	None required.	Less than significant
Impact 3.11-4: Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	PDF-21	Significant and unavoidable	MM 3.11-1 through MM 3.11-3, listed under Impact 3.11-1.	Significant and unavoidable
Cumulative		Less than significant	None required.	Less than significant
3.12 Population and Housing				
Impact 3.12-1: Would the project 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	None required.	Less than significant
Cumulative	PDF-1	Less than significant	None required.	Less than significant
3.13 Public Services				
Impact 3.13-1: Would implementation of the proposed project result in adverse physical impacts associated with the provision of new or physically altered fire, police, school, or other public service facilities?	PDF-4, PDF-10, PDF-11, PDF-19	Less than significant	**MM 3.13-1:** Prior to the issuance of any grading permits, the applicant shall obtain the Orange County Fire Authority design approval of all fire protection access roads, fire hydrants, and fire prevention design measures that shall include the following: • Turning radius and access in and	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			around the project site and structures shall be designed to accommodate large fire vehicles and their weight. • All roadways that have medians that do not exceed 1000-feet in width shall have a turnaround. Roadways with medians greater than 1000-feet in width shall provide emergency turnaround access for heavy fire equipment. • If a dead-end street exceeds 150 feet or when otherwise required, a clearly marked fire apparatus access turnaround shall be provided and approved by the Orange County Fire Authority. • All traffic signals on public access ways shall include the installation of optical preemption devices. • Project plans shall include plan and section views and indicate the grade and width of the access road flow-line to flow-line. • Applicable CC&Rs shall contain provisions prohibiting obstructions such as speed bumps/humps, control gates or other modifications unless approval from the Orange County Fire Authority is granted. • A note shall be placed on the fire protection access easement plan indicating that all street/road signs shall be designed and maintained to be illuminated in a manner meeting the Orange County Fire Authority requirements. • Fire hydrant spacing shall be 600 feet between fire hydrants, or as approved by the Orange County Fire Authority. • All electrically operated gates shall install emergency opening devices as approved by the Orange County Fire Authority. **MM 3.13-2:** The HOA managing the proposed	

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
			project shall ensure disclosure of potential wildfire hazards the location of fire and emergency services to all residents. This information shall be provided in information provided to new homeowners and within regular communications to residents from the HOA.	
Cumulative	PDF-4, PDF-10, PDF-11, PDF-19.	Less than significant	None required.	Less than significant
3.14 Recreation				
Impact 3.14-1: 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?	PDF-1	Less than significant	None required.	Less than significant
Impact 3.14-2: Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	PDF-1	No impact	None required.	No impact
Cumulative	PDF-1	Less than significant	None required.	Less than significant
3.15 Transportation/Traffic				
Impact 3.15-1: Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	PDF-21	Less than significant	None required.	Less than significant
Impact 3.15-2: Would the project conflict with an applicable congestion management program, including, but not limited to level of service standard and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?		Less than significant	None required.	Less than significant
Impact 3.15-3: Would the project substantially increase hazards due to a design feature	PDF-7, PDF-8, PDF-9.	Less than significant	None required.	Less than significant

Impact	Applicable Project Design Features	Level of Significance before Mitigation	Mitigation Measures	Significance after Mitigation
(e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				
Impact 3.15-4: Would the project result in inadequate emergency access?		Less than significant	None required.	Less than significant
Cumulative		Less than significant	None required.	Less than significant
3.16 Utilities and Service Systems				
Impact 3.16-1: Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?		Potentially significant	MM 3.6-2: Listed above under Impact 3.6-5. MM 3.6-3: Listed above under Impact 3.6-5.	Less than significant
Impact 3.16-2: Would the project 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 impacts?		Less than significant	None required.	Less than significant
Impact 3.16-3: Would the project 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?		Potentially significant	MM 3.9-1 Listed above under Impact 3.9-1.	Less than significant
Impact 3.16-4: Would the project result in insufficient water supplies available to serve the project from existing entitlements and resources, or new or expanded entitlements are needed?	PDF-18	Less than significant	None required.	Less than significant
Impact 3.16-5: Would the project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?		Less than significant	None required.	Less than significant
Impact 3.16-6: Would the project comply with federal, state and local statutes and regulations related to solid waste?		No impact	None required.	No impact
Cumulative		Less than significant	None required.	Less than significant

CHAPTER 2
Project Description

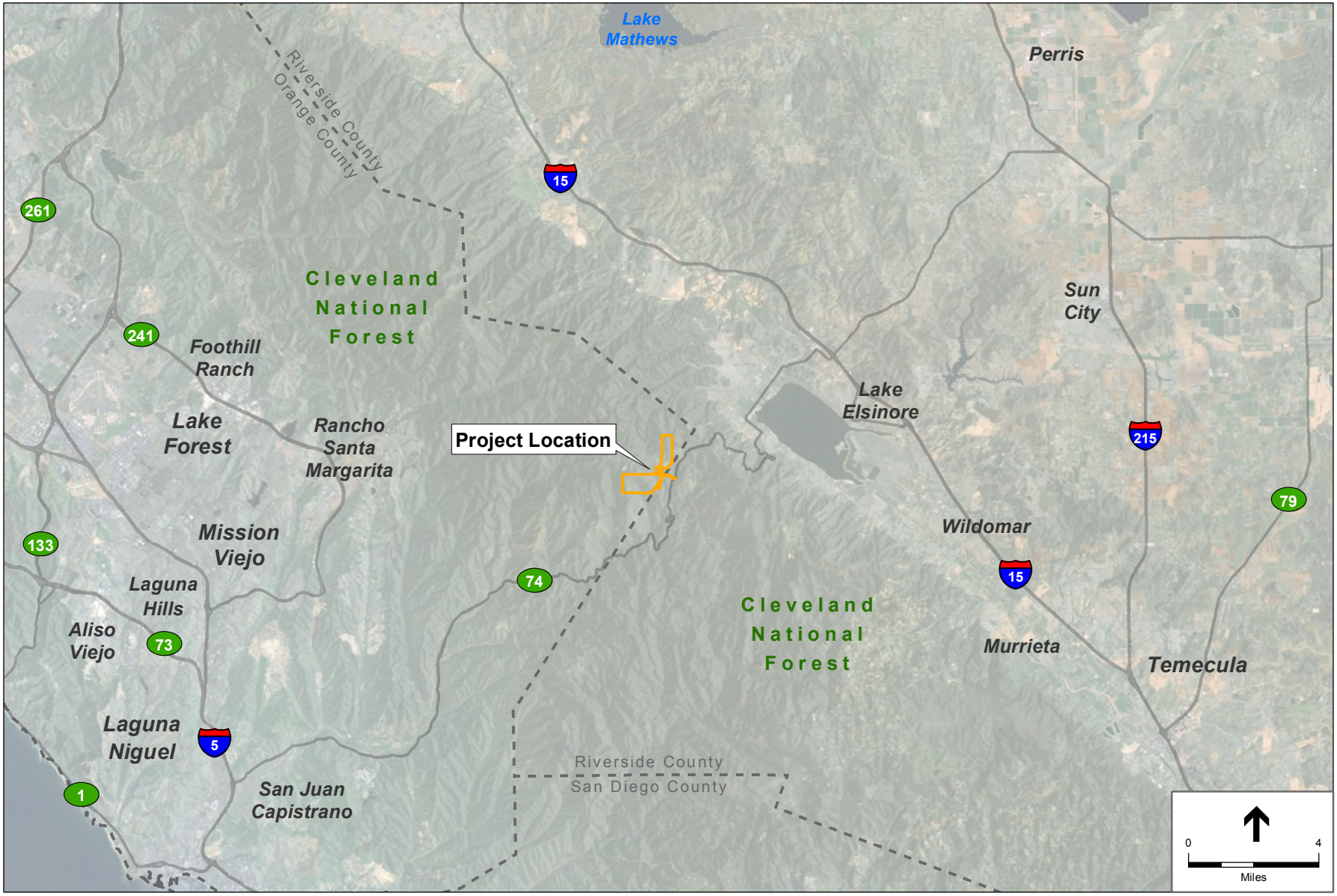
2.1 Project Background

Development on the project site has been the subject of ongoing environmental review related to proposed developments since 2006. On May 22, 2006, an NOP and Initial Study were distributed to the State Clearinghouse (SCH), interested agencies, and the public for a 30-day public review period. The SCH issued a project number for the previous EIR (SCH No. 2006051110) and a public scoping meeting was held on June 1, 2006. Between circulation of the NOP in 2006 and August 2008, the project applicant reduced the proposed project from an original 213 single-family residential units to between 165 and 169 single-family residential units. As a result, the NOP was re-issued and another public scoping meeting was held on August 18, 2008. Prior to circulation of the Draft EIR, the project applicant decided to suspend the previous project in response to a downturn in the residential housing market. Therefore, the Draft EIR was not circulated for public review, finalized, nor considered by the County for approval.

The project has since been redesigned and is smaller than the previously proposed project, as described in detail in Section 2.5, *Project Design Characteristics* below. The project no longer proposes residential development within Riverside County. Because several years have passed since commencement of the previous CEQA documentation, and because various details of the proposed project have been revised, new CEQA documentation (this Draft EIR) has been prepared.

2.2 Project Location

The proposed project site consists of two non-contiguous parcels located in the southeastern portion of unincorporated Orange County, between 2,300 feet and 2,970 feet west of Ortega Highway, respectively, and separated by Long Canyon Road. The project site is situated on private property in the Santa Ana mountains. The project is approximately 1,500 feet west of El Cariso Village, a small rural residential area, six miles southwest of the City of Lake Elsinore in Riverside County and approximately 6.25 miles east of the City of Rancho Santa Margarita in Orange County (see **Figure 2-1**). Phase 1 (south parcel) is approximately 389.6 acres and is located between 2,300 feet and 2,970 feet west of Ortega Highway. The 194.5-acre Phase 2 (north parcel) is located approximately 122 feet north of Phase 1 (south parcel), and is between 2,240 and 2,670 feet west of Ortega Highway. **Figure 2-2** illustrates the project site in its local setting.

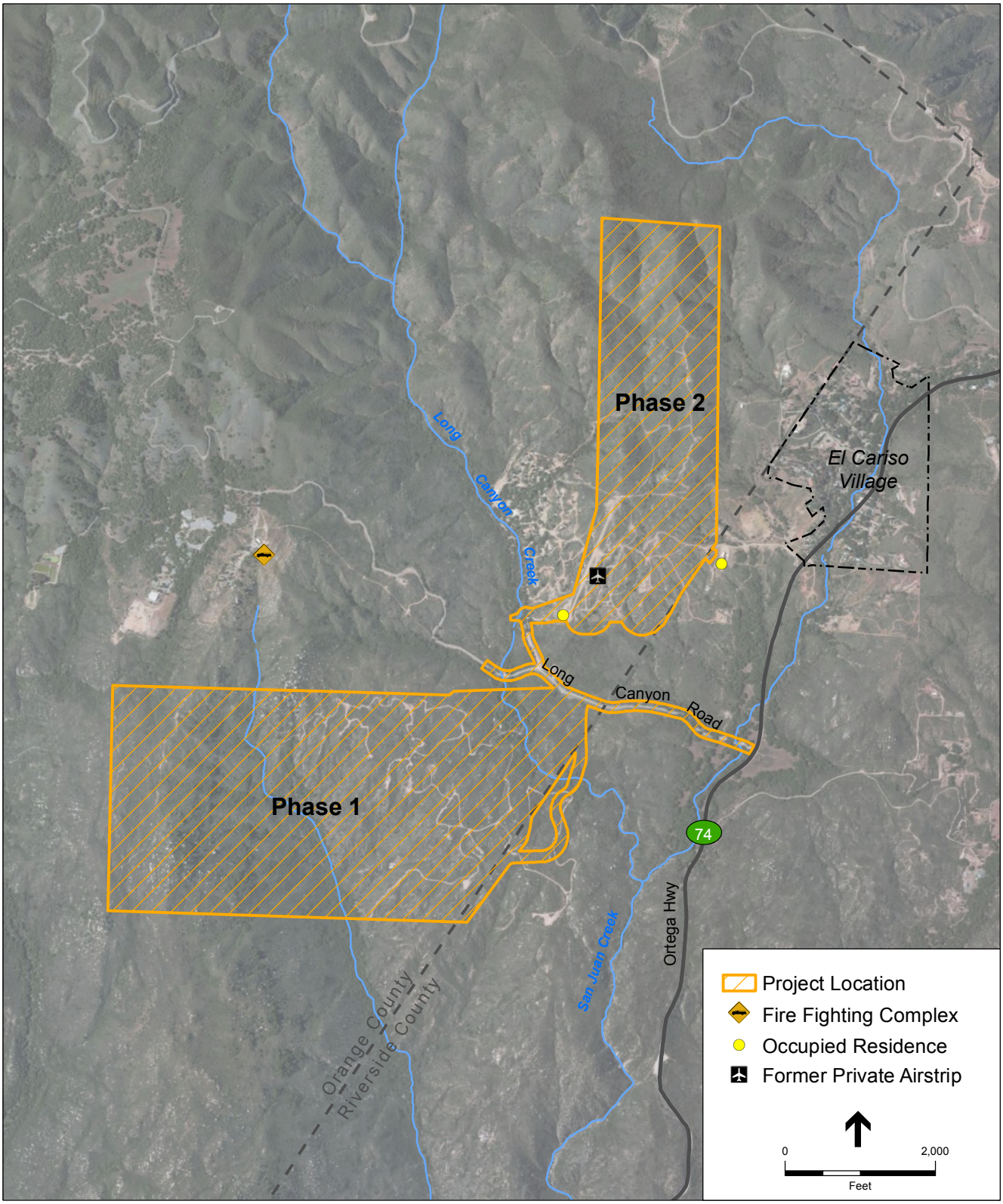


SOURCE: ESRI

The Preserve at San Juan

Figure 2-1

Regional Location



SOURCE: ESRI.

The Preserve at San Juan

Figure 2-2

Project Location

2.3 Site Characteristics and Adjacent Uses

The project site is made up of two non-contiguous parcels of land that are separated by a parcel of land that is part of the Cleveland National Forest and Long Canyon Road. The project site is located within an undeveloped and densely vegetated part of the Santa Ana Mountains within the unincorporated southeastern portion of Orange County. The natural topography of the area is diverse and consists of steep terrain, ridgelines, and areas of level ground. For example, the northern portion of the project site has a steep ridgeline and the southernmost area has a deep canyon, and elevations range from approximately 3,300 feet above mean sea level (amsl) in the northeast portion of the project site to approximately 2,025 amsl in the southern portion in the canyon. Most of the area proposed for development is between 2,400 and 2,900 feet amsl.

The project site has an existing Orange County General Plan land use designation of Open Space (OS) and a zoning designation of General Agricultural (A1).

Phase 1 (south parcel) is 389.6 acres and is located west of Ortega Highway. The site consists of gently sloping terrain in the southern portion of the parcel and steep, rugged terrain in the northern portion of the parcel. The majority of Phase 1 (south parcel) is undisturbed and supports dense chaparral, densely vegetated hills, and scattered patches of oak woodland. Long Canyon Creek crosses the southwest corner of the parcel.

Existing disturbance areas are generally located in the northeastern portion of the Phase 1 (south parcel) and includes a network of dirt roads and trails, one abandoned residence with a shed containing a water well and cistern.

Phase 2 (north parcel) is 194.5 acres and is located approximately 122 feet north of Phase 1 (south parcel), and is also west of Ortega Highway. The Phase 2 (north parcel) consists of gently sloping terrain in the northeast portion of the parcel and steep, rugged terrain throughout the remainder of the parcel. The majority of the parcel is undisturbed and supports dense chaparral with large rock outcroppings and areas of oak woodland. Long Canyon Creek crosses the northeast corner of the parcel and an unnamed stream bisects the center of the parcel from north to south.

Existing disturbance areas are located in the southern portion of the parcel and include a network of dirt roads and trails throughout the parcel, and an occupied residence in the southwest corner of the parcel that would be vacated prior to the start of construction. This portion of site is connected to the electricity grid and contains two active water wells and several water storage tanks (one of them 8,000 gallons). Additionally, various cleared graded areas exist where structures had previously been built.

The southwestern portion of the Phase 2 (north parcel) contains the previously used McConville Airstrip (FAA Identifier CA42) that has a gravel surface, is approximately 1,000 feet long, and lies in a northeast to southwest direction on a slope. (see Figure 2-2). The airstrip was previously used for training of landing small aircraft in rural areas. A hangar/maintenance structure, bunker, and a shed that contains tools, equipment and various oils and lubricants is located adjacent to the airstrip.

In addition, several areas within Phase 2 (north parcel) are being used to store numerous dilapidated vehicles and debris piles. The parcel also contains two trash pits were used up until the 1950s or 1960s, and are now that are covered by soil and vegetation.

Adjacent Uses. Land uses adjacent to the project area are described below:

- **Between Phase 1 and 2.** An undeveloped parcel that is part of the Cleveland National Forest separates the two project phases, and consists of gently sloping terrain in the northern portion of the parcel; and steep, rocky, rugged terrain in the southern portion. The parcel is undisturbed (except for the paved Long Canyon Road right-of-way), and supports dense chaparral, as well as scattered patches of oak woodland.
- **North:** Undeveloped, densely-vegetated Cleveland National Forest lands are located to the north of both Phase 1 (south parcel) and Phase 2 (north parcel).
    - The nearest structures to the north of Phase 1 (south parcel) include a residence near Long Canyon Road that is 1,340 feet from the project site, the U.S. Forest Service El Cariso Hotshot Camp (forest service fire-fighting complex) that is approximately 1,400 feet from the site; the Cleveland National Forest Blue Jay Campground (with 50 campsites), which is farther than 1,500 feet from the site; and the Los Pinos Conservation Camp (1,500 feet northwest of the site), which is a residential education center that is owned by the Cleveland National Forest and operated by the California Conservation Corps (CCC).
    - No structures are located to the north of Phase 2 (north parcel). Further to the east of these facilities are single-family rural residences. There are no structures north of Phase 2 (north parcel).
- **East:** Undeveloped, densely-vegetated Cleveland National Forest lands are located to the east of both phases.
    - There are no structures in proximity to the east of the Phase 1 (south parcel). The closest structure to the east of Phase 1 (south parcel) is Ortega Highway, which is located between 2,300 feet and 2,970 feet to the east.
    - The nearest structures to the east of the Phase 2 (north parcel) are rural residential structures that exists on the perimeter of the small rural community of El Cariso Village that is located approximately 1,500 feet east of Phase 2 (north parcel), in Riverside County.
- **South:** Undeveloped densely vegetated Cleveland National Forest lands are located to the south of Phase 1 (south parcel). There are no structures in proximity to the south of Phase 1 (south parcel). An area containing Long Canyon Road and an undeveloped parcel that is part of the Cleveland National Forest is located to the south of the Phase 2 (north parcel), which is in between the two project phases. In addition, a residence is located approximately 160 feet from the southeastern boundary of the Phase 2 (north parcel).
- **West:** Undeveloped densely vegetated Cleveland National Forest lands are located to the west of Phase 1 (south parcel). There are no structures in proximity to the west of Phase 1

(south parcel). The Mystic Oaks Retreat that includes various cabins for visitors is located to the west of the Phase 2 (north parcel).

2.4 Project Objectives

The proposed project is intended to provide for the development and maintenance of a single-family residential neighborhood in conjunction with limited vineyard uses. The following objectives have been established by the applicant to serve as a basis for comparing the alternatives, and for the evaluation of associated environmental impacts.

- To provide a residential community that is compatible with the surrounding residential and natural areas.
- To mitigate impacts to existing blue-line streams and California coastal live oaks.
- To ensure that current infrastructure and public services would not be lessened or burdened by project implementation but would be improved. This includes water capacity, fire safety, and storm-water runoff quality, and road safety.
- To ensure that lot coverage and density do not have impacts upon the site which cannot be mitigated in accordance with the County of Orange land use policies and development standards.
- To provide mitigation to the satisfaction of the County of Orange, California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service for any impacts to habitat or blue-line streams.
- To provide a residential community that incorporates a wildland fire-safe design that protects the proposed homes from potential wildland fires in accordance with the standards set forth by the Orange County Fire Authority.
- To provide a residential community that is uniquely different by integrating with and being sensitive to the environmental constraints of the existing terrain, geology, blue line streams, and the California live oak trees and that offers a large lot and remote lifestyle in a natural setting that is not commonly found within Orange County.

2.5 General Plan Land Use Amendment and Zone Change

The existing Orange County General Plan designation for the project area is Open Space (OS), which allows for limited land uses that do not require a commitment of significant urban infrastructure. The existing zoning designation is General Agricultural (A1), which allows residential development at a maximum density of 0.25 dwelling unit per acre (or four acres per dwelling unit), and other low intensity uses that have a primarily open space character.

The project proposes to change the General Plan Land Use designation of the project area to Rural Residential (1A), which allows a minimum density of 0.25 to 0.5 dwelling units per acre, (or two to four units per acre). The project also proposes to change the zoning designation to

Residential Agricultural (AR). The AR zone provides for single-family residential neighborhoods in conjunction with agricultural and outdoor recreational uses and requires a minimum residential lot size of 7,200 square feet. The proposed residential development is designed to be consistent with the AR development regulations pursuant to Section 7-9-59.8 (AR District) of the County of Orange County Zoning Code.

2.6 Water Districts Annexations

The project site is adjacent to the Elsinore Valley Municipal Water District (EVMWD) service area, and an existing out of boundary water distribution pipeline runs adjacent to the project site. Water supplies to the proposed project would be supplied through this pipeline, and the portions of the project site that would require potable water (Approximately 133.4 acres) would be annexed into the EVMWD service area. Areas of the project site that would remain in natural open space, or fuel modification areas that do not require irrigation, would not be annexed into the water service area.

EVMWD is wholly within the boundaries of Western Municipal Water District (Western), which is wholly within the boundaries of Metropolitan Water District (MWD) which provides water supplies. Because of this arrangement, the area to be included in the EVMWD service area would also be annexed into the boundaries of Western and MWD. These service area boundary changes require approval by Riverside County Local Agency Formation Commission (Riverside LAFCO).

2.7 Project Design Characteristics

The proposed project would develop 72 single-family residential lots on the project site, as well as, internal circulation, external access improvements, on-site wastewater treatment systems, internal landscaping, fuel modification zones, and dedicated open space. The proposed project has been designed to provide:

- Ecosystem planning, which preserves a large block of open space that is contiguous to other large blocks of open space, thereby providing greater connectivity and linkages to foster wildlife movement;
- Oak tree mitigation which relies on preservation/restoration/enhancement of on-site oak trees through sustainable tree plantings (as well as native tree planting);
- Wildland planning that utilizes sophisticated fire behavior modeling to provide a fire safe design to protect residents and structures, by including fuel modification zones and defendable spaces around residences; and
- Water quality and hydromodification features that efficiently utilize the project's infiltration capacity along with low impact development techniques and preservation of natural processes within drainages for water treatment.

2.7.1 Residential and Hardscape Elements

The project would develop 72 single-family residential lots under a proposed "Rural Residential" (1A) General Plan Land Use designation and "Agricultural Residential" (AR) zoning. The project would be developed in two phases (Phase 1 [south parcel] and Phase 2 [north parcel]) and would include large areas of open space. A summary of the project development area is provided in **Table 2-1** and shown in **Figure 2-3** for Phase 1 (south parcel) and **Figure 2-4** for Phase 2 (north parcel).

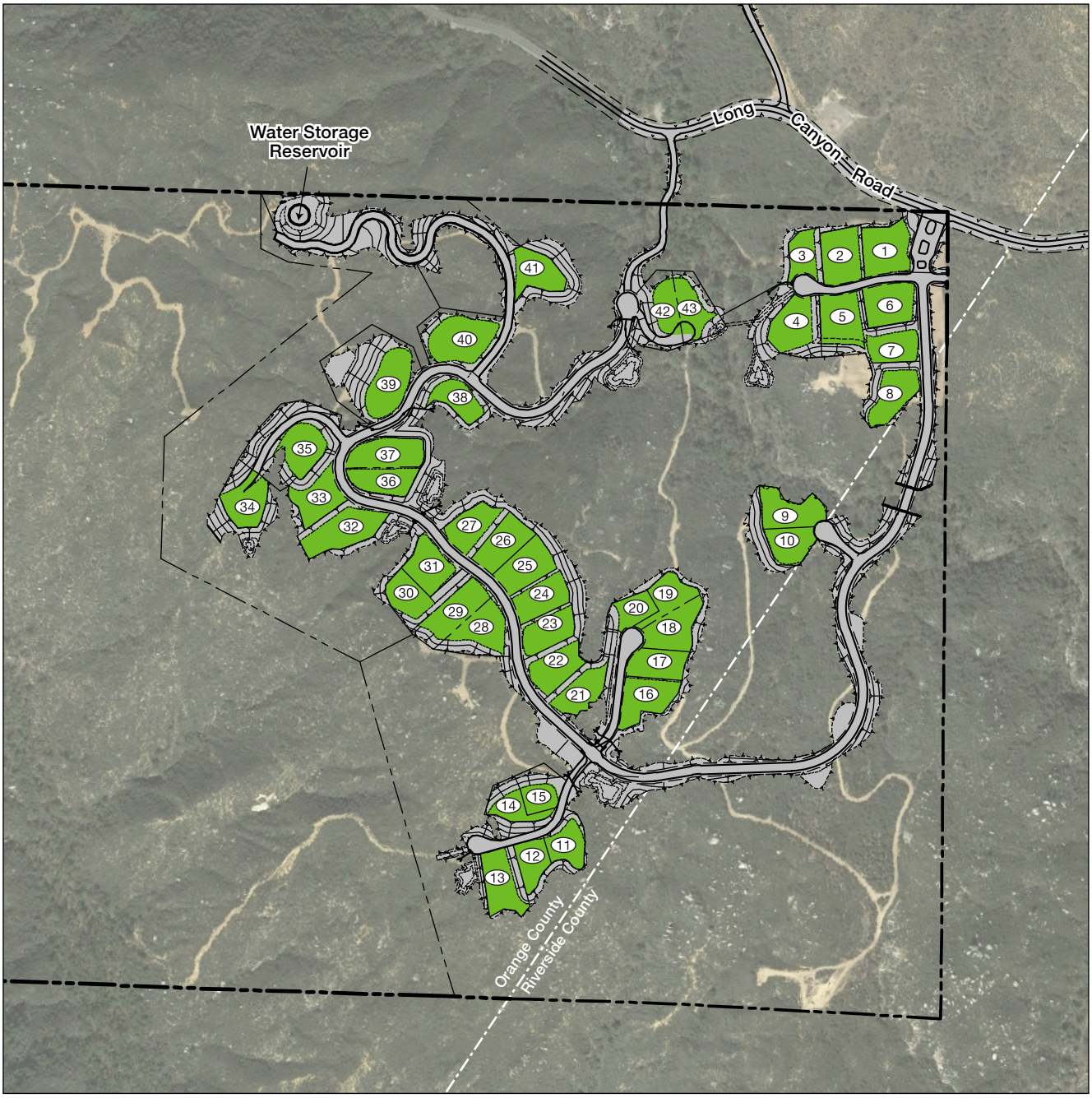
The proposed project would cluster development toward Long Canyon Road on the portions of the parcels where the natural terrain is conducive to development. Open space would be concentrated in the western and northern portions of the project site to create a buffer between the proposed residential uses and the adjacent Cleveland National Forest lands; which would buffer the residential uses and reduce or avoid potential environmental edge effects of development. The areas of project disturbance are shown in **Figure 2-5**.

TABLE 2-1
PROJECT DEVELOPMENT AREA SUMMARY

Land Use	Gross Acres	Single-Family Units
Phase 1 (south parcel)		
Residential Building Pads	42.7	43
Roadways	7.6	
Landscape, Fuel Modification, Vineyards	58.3	
Total Developed Phase 1 (south parcel)	**108.6**	
Phase 2 (north parcel)		
Residential Building Pads	32.0	29
Roadways	8.2	
Landscape, Fuel Modification, Vineyards	20.7	
Total Developed Phase 2 (north parcel)	**60.9**	
Open Space		
Phase 1 (south parcel)	281.0	
Phase 2 (north parcel)	133.6	
Total Open Space	**414.6**	
Total Project Acreage	**584.1**	**72**

Source: The Preserve at San Juan Area Plan Document, 2017.

As shown in **Table 2-1**, Phase 1 (south parcel) of the project would develop 43 single-family residences on approximately 108.6 acres and 281 acres would be dedicated to open space. Phase 2 (north parcel) would develop 29 single-family residences on approximately 60.9 acres and 133.6 acres would be dedicated to open space. The total onsite project area (both Phase 1 [south parcel] and Phase 2 [north parcel]) includes 584.1 acres and the project proposes improvements to 169.5 of those acres. The remaining 414.6 acres (71 percent of the project area) would remain undeveloped open space. No improvements, including landscaping, would occur in the open space portions of the project site. Areas that are designated for open space by the proposed project would be preserved in the existing natural condition.



SOURCE: Robert Mitchell & Associates, 2014

The Preserve at San Juan

Figure 2-3

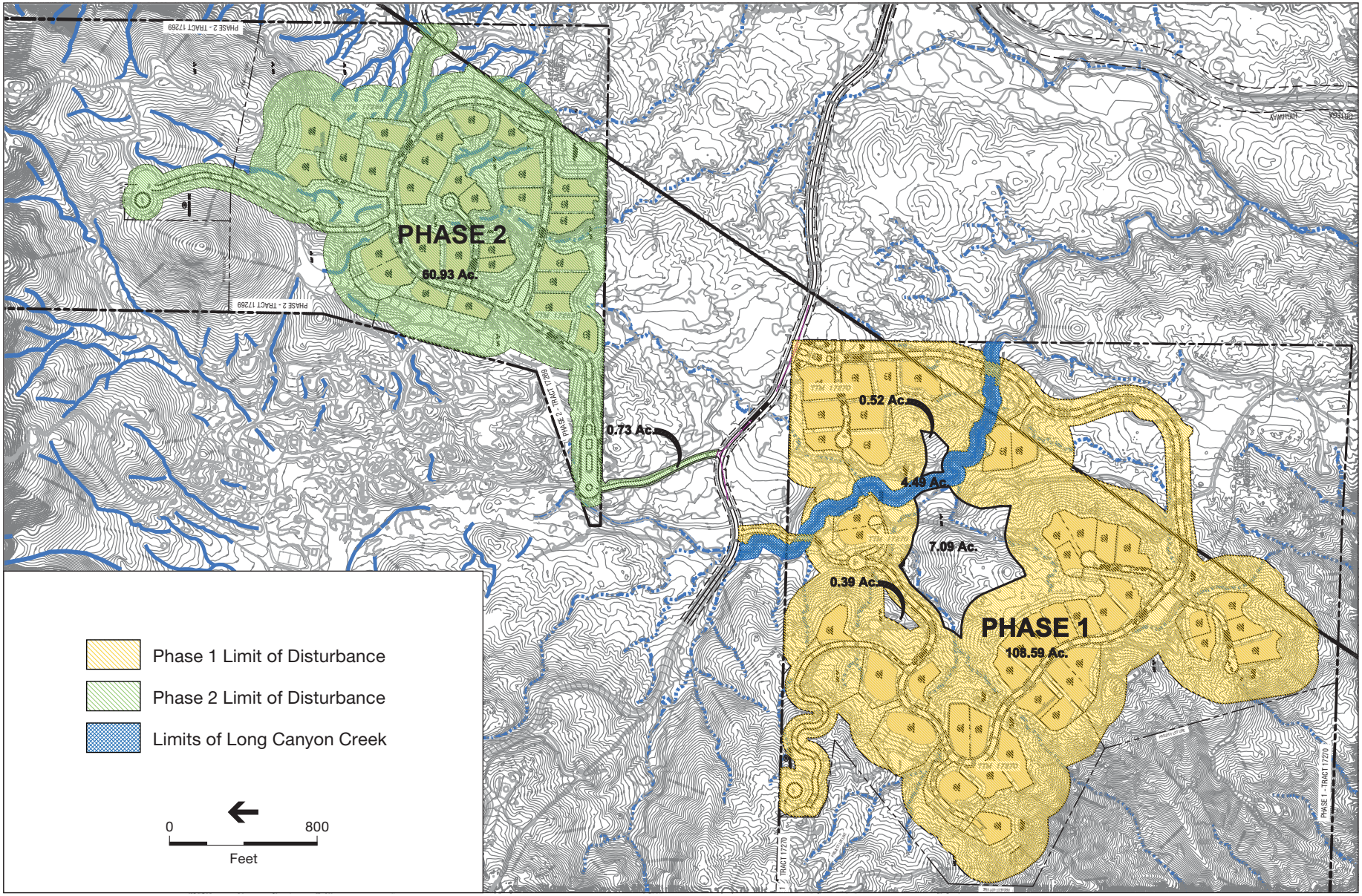
Phase 1 Site Development Plan

SOURCE: Robert Mitchell & Associates, 2014

The Preserve at San Juan

Figure 2-4

Phase 2 Site Development Plan



SOURCE: Hunsaker & Associates, 2016

The Preserve at San Juan

Figure 2-5

Areas of Disturbance

Residential lot sizes would average 23,997 square feet for Phase 1 (south parcel) and 23,667 square feet for Phase 2 (north parcel). The maximum height of all residential development would be two stories (less than 35 feet).

Proposed hardscape elements include project entry monuments for each Phase, and walls and fences proposed for the individual lots. The heritage for the area is Spanish in nature with the Mission San Juan Capistrano and Rancho Mission Viejo having the biggest influence on structural design. Materials, colors, and textures relating to this design theme would be translated by including slumpblock masonry with either a mortarwash finish or left unfinished in an adobe color. The mortar-washed slumpblock is proposed at the project entries as it has a more refined appearance, while the adobe colored slumpblock is proposed as the individual residential lots. The proposed fencing consists of precast concrete two-rail fencing with low mortar-washed slumpblock pilasters or high tubular steel fencing. The two-rail fencing and low pilasters is proposed at the project entries. See **Figure 2-6** through **Figure 2-9** for the fencing and wall plans for each phase.

2.7.2 Vehicular Circulation

Access to both phases of the project would be provided from Long Canyon Road via Ortega Highway (SR-74), which are both public roadways. Long Canyon Road is designated as a 66-foot right-of-way public road that branches off of Ortega Highway (State Route 74). Long Canyon Road was improved in 2016 and currently provides a paved width of 24-feet with a curb and gutter.

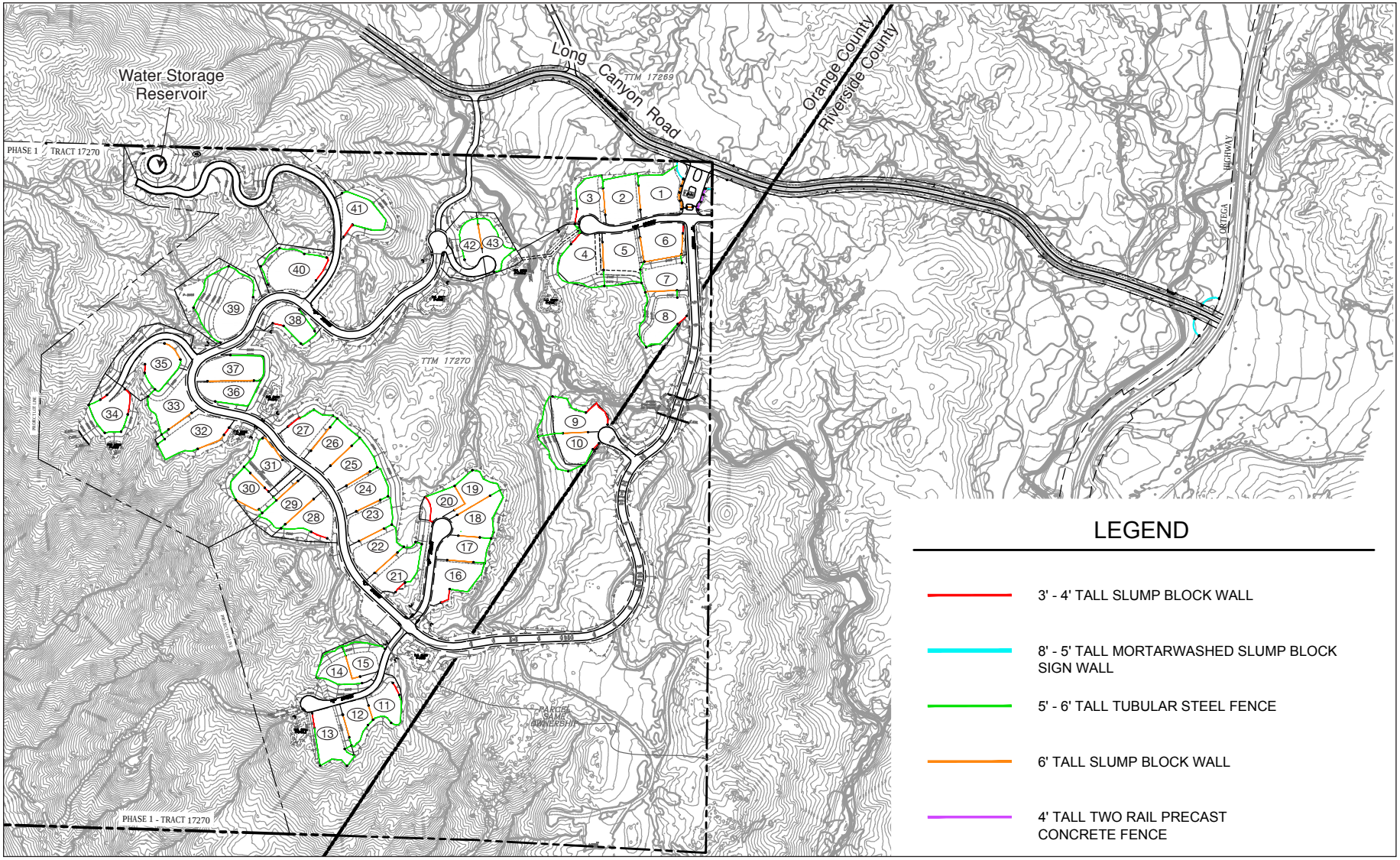
The onsite roads throughout both phases would loop through the proposed development areas and would be designed pursuant to both the Orange and Riverside Counties'(depending on roadway location) rural street standards, and would have features such as rolled curbs, no sidewalks, cul-de-sacs, and landscaped planter islands.

Phase1 (south parcel)

The Phase1 (south parcel) would be accessed directly from Long Canyon Road via gated entries that would be setback from Long Canyon Road at a minimum of 100 feet from the curb line of Long Canyon Road, to provide adequate vehicle stacking space (per Orange County Standard Plan No. 1107). Stop signs, stop bars, and stop legends would be installed at the intersection of Long Canyon Road for vehicles exiting the site.

A portion of the onsite roadway would cross Long Canyon Creek in the northern portion of Phase 1 (south parcel). The roadway creek crossing would consist of an arch span bridge of concrete or steel with a natural bottom that was designed to minimize potential impacts to the creek and its related biological resources.

The Phase 1 (south parcel) roadway would connect back to Long Canyon Road to the west of the entrance gate, via an existing off-site roadway that would be improved (approximately 0.5-acre off-site improvement area) to existing Orange County standards, that would be used as a secondary exit and a restricted entrance. The secondary exit would be limited to residents leaving



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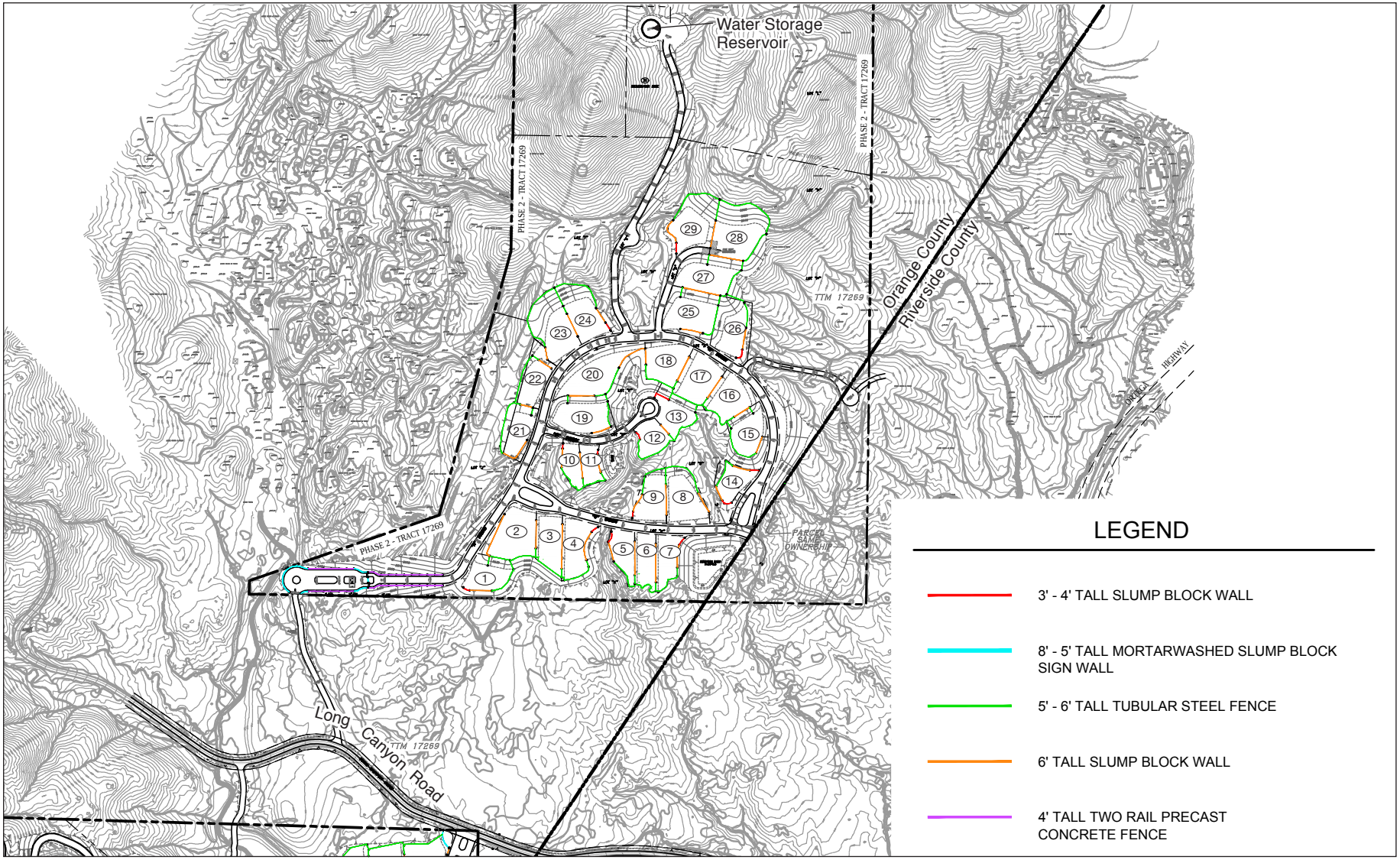
SOURCE: Robert Mitchell & Associates, 2014

The Preserve at San Juan

Figure 2-6

Fence and Wall Plan - Phase 1

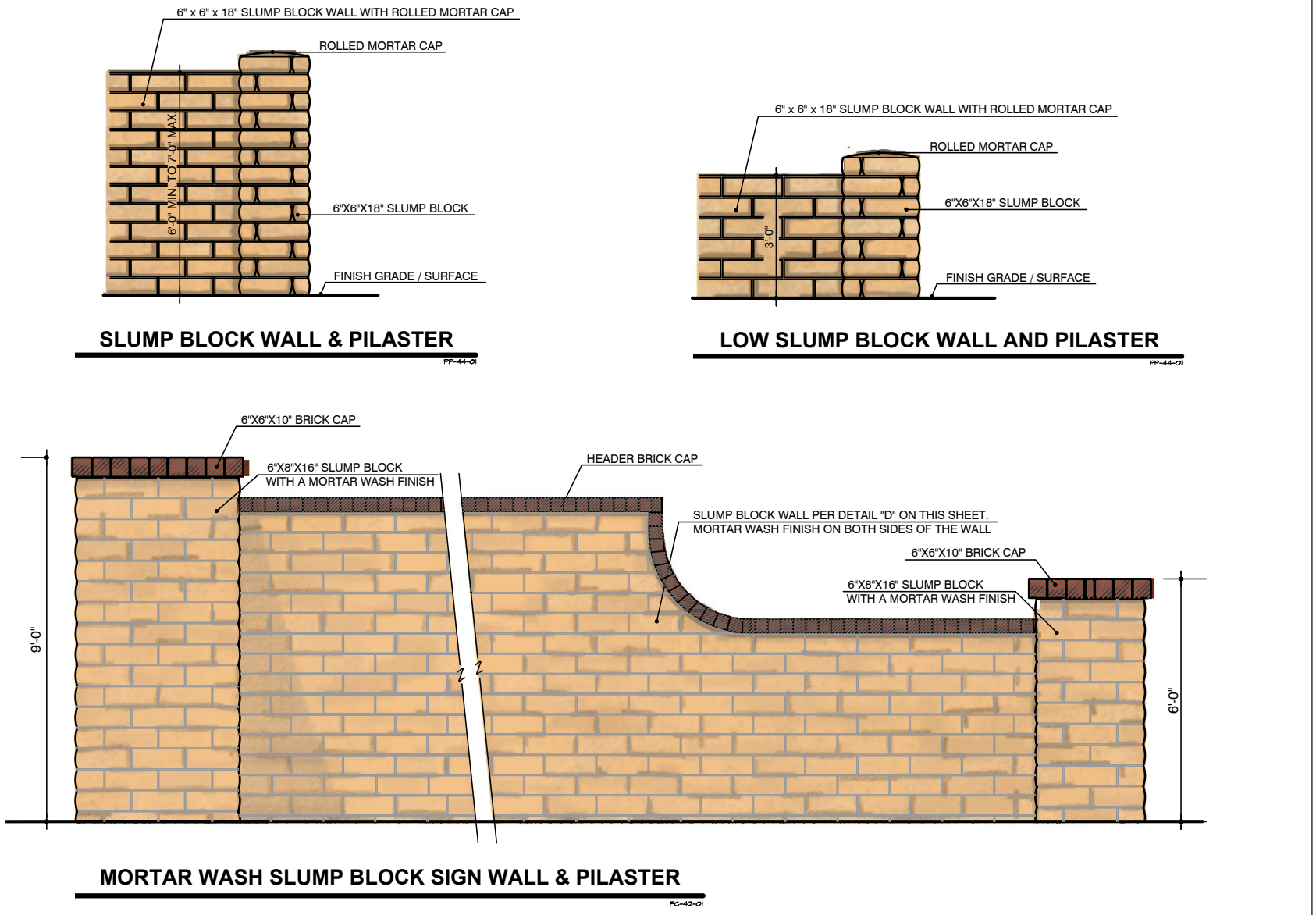


SOURCE: Robert Mitchell & Associates, 2014

The Preserve at San Juan

Figure 2-7

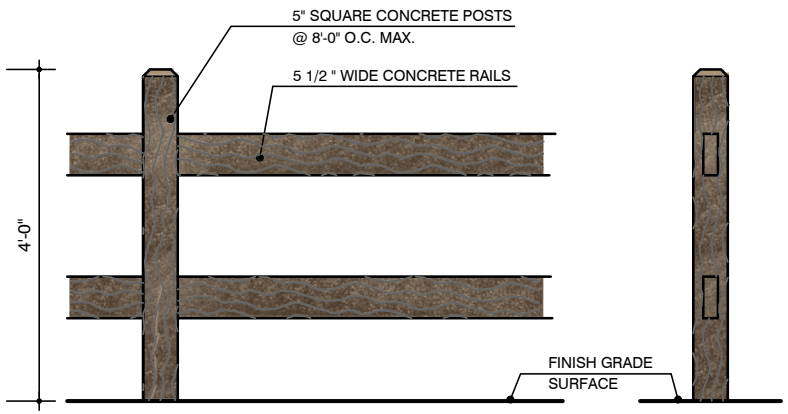
Fence and Wall Plan - Phase 2



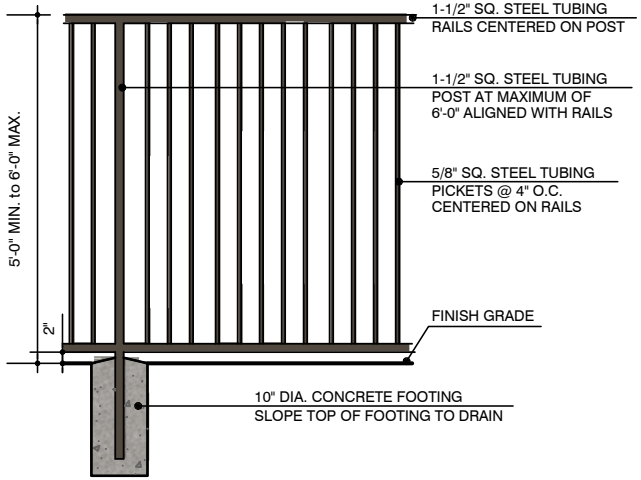
SOURCE: Robert Mitchell & Associates, 2013

The Preserve at San Juan

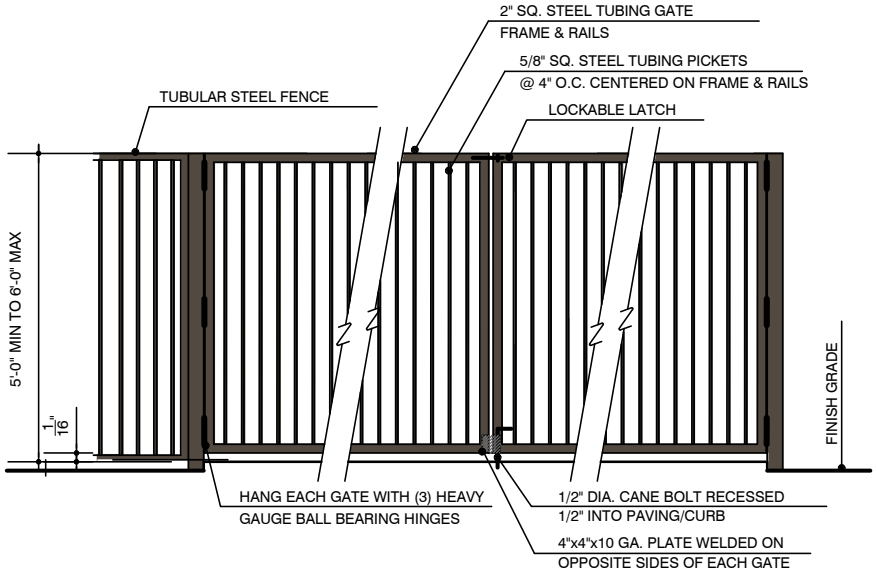
Figure 2-8
Wall Details



CONCRETE RAIL FENCE



TUBULAR STEEL FENCE



TUBULAR STEEL GATE

SOURCE: Robert Mitchell & Associates, 2014

The Preserve at San Juan

Figure 2-9
Fence Details

(departures only), and the restricted access would be for emergency responders only. The secondary entrance gate would be locked, and a "knox box" would be installed to provide emergency entry for Sheriff and Fire Department personnel. Knox boxes are small mounted safes that hold keys or access cards for fire and police departments to use in emergency situations. The proposed circulation Phase 1 (south parcel) is shown in Figure 2-3.

Due to the topographical constraints of the Phase 1 (south parcel) an 8-acre portion of the onsite roadway is within Riverside County. Roadway improvement permits for development of this portion of the onsite private roadway would be required by the Riverside County Transportation Department to ensure improvements are consistent with private roadway improvement requirements.

Phase 2 (north parcel)

Phase 2 (north parcel) would be accessed from Long Canyon Road via an existing 0.73-acre off-site roadway area that would be improved for the project. Improvements would include pavement and installation of stop signs, stop bars, and stop legends at the intersection of Long Canyon Road for exiting vehicles. Gated entries would be installed at the entrance to the Phase 2 (north parcel).

The secondary exit and a restricted entrance for Phase 2 (north parcel) would also be gated and would be limited to residents leaving the site and restricted access for emergency responders only. The entrance gate at the secondary access would be restricted by the use of a "knox box" that would provide for Sheriff and Fire Department entry, as needed. The secondary exit/restricted access would connect to Monte Vista Street in Riverside County. The connection roadway to Monte Vista Street would be improved pursuant to Riverside County's roadways standards. The proposed circulation for the Phase 2 (north parcel) is shown in Figure 2-4.

Off-Site Roadway Improvements

The off-site roadway improvements that would occur for the Phase 1 (south parcel) include paving and grading 0.5-acres of an existing unpaved roadway to provide secondary access. The off-site roadway improvements for Phase 2 (north parcel) includes grading, paving, installation of street lights, a water line, and dry utilities (electricity, cable, telephone), which would occur on a 0.73-acre off-site currently unpaved roadway that connects to Long Canyon Road. The Phase 2 (north parcel) secondary improvements include grading and paving to Monte Vista Street, in addition to installation of street lights, water line, and dry utilities.

In addition, improvements would occur within the paved right-of-way on Ortega Highway at the Long Canyon Road intersection to provide enhanced access to both phases of the project. The improvements consist of installing a northbound 12-foot wide acceleration lane and a northbound 12-foot wide left turn lane on Ortega Highway; and installing a minimum 22-foot wide southbound deceleration lane on Ortega Highway from Long Canyon Road to 160 feet to the north. The Ortega Highway improvements would require an encroachment permit and coordination with the California Department of Transportation (Caltrans) to ensure that the roadway improvements are implemented pursuant to Caltrans standards.

2.7.3 Landscape Elements and Vineyards

The landscaped areas within the proposed project are all located within the development area identified in **Table 2-1**, and broken down into the following general categories that are visually depicted in the conceptual landscape plans shown in **Figures 2-10** and **2-11**.

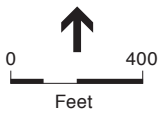
- Vegetated Swales
- Project Entries
- Fuel Modification Zone A
- Fuel Modification Zone B, which includes vineyards and manufactured slopes
- Fuel Modification Zone C

The plant palette for each category meets the following criteria:

- The plant is appropriate for the climatic zone of the project site, both in altitude and location.
- All of the plant material is rated as either 'LOW' or "VERY LOW" in the State of California's Water Use Classifications of Landscape Species (WUCOLS); except for the treated effluent dispersal areas of Fuel Modification Zone 'B' which would contain "MODERATE" water use plant material.
- Native plant material would be used extensively throughout the project.
- All plant material was reviewed by the project biologist to verify that none of the plants would be detrimental to the existing natural vegetation.
- No plants are proposed that are listed as being invasive to native habitat.
- All plants proposed for fuel modification zones have been utilized in a manner consistent with like applications for density, amounts and location.
- All of the plant material is available from localized wholesale sources.

Vegetated Swales

Vegetated swales are landscaping features that also provide storm water treatment and conveyance to infiltration basins that would capture and retain the difference in runoff flow rates (and volume) between the site's natural and proposed conditions. Vegetated swales would be located throughout the project site, and would vary in width and have a meandering path to create a more natural appearance. The feature would be planted with a hydroseed mix of a blend of Fescue grasses. The materials would be self-maintaining other than the need for watering and possible scalping of the grass every few years to eliminate thatch buildup. The swales would be water efficient with a rating of moderately low water consumption, and designed per the County of Orange requirements to control and treat runoff.



- Arbutus 'Marina' (Marina Madrone)
- Platanus racemosa (California Sycamore)
- Cercis occidentalis (Western Redbud)
- Populus fremontii (Western Cottonwood)
- Heteromeles arbutifolia (Toyon Tree)
- Quercus agrifolia (Coast Live Oak)
- Agave attenuata (Agave)
- Alogyne huegelii (Blue Hibiscus)
- Anigozanthus flavidus 'Red' (Red Kangaroo Paw)
- Arbutus unedo 'Compacta' (Compact Strawberry Tree)
- Arctostaphylos hookeri (Monterey Manzanita)
- Encelia californica (California Encelia)
- Lantana camara (Lantana)
- Muhlenbergia rigens (Deer Grass)
- Rhus integrifolia (Lemonade Berry)
- Rhus ovata (Sugar Bush)
- Ceanothus griseus horizontalis (Carmel Creeper)
- Ceanothus griseus 'Santa Ana' (Santa Ana Carmel Creeper)
- Cistus hybridus (White Rockrose)
- Romneya coulteri (Matilja Poppy)
- Rosa californica (California Wild Rose)
- Fuel Modification Zone A
- Fuel Modification Zone B
- Fuel Modification Zone C
- Special Maintenance Area - Hydroseed Mix
- Roadway Medians & Isla
- Water Quality Swale - Fescue
- Decomposed Granite
- Roadside Brush Clearance
- Proposed Vineyards
- Hydroseed Mix Species

SOURCE: Robert Mitchell & Associates, 2014

The Preserve at San Juan

Figure 2-10
Phase 1 (South Parcel)
Conceptual Landscape Plan

- Arbutus 'Marina' (Marina Madrone)
- Platanus racemosa (California Sycamore)
- Cercis occidentalis (Western Redbud)
- Populus fremontii (Western Cottonwood)
- Heteromeles arbutifolia (Toyon Tree)
- Quercus agrifolia (Coast Live Oak)
- Agave attenuata (Agave)
- Alogyne huegelii (Blue Hibiscus)
- Anigozanthus flavidus 'Red' (Red Kangaroo Paw)
- Arbutus unedo 'Compacta' (Compact Strawberry Tree)
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- Encelia californica (California Encelia)
- Lantana camara (Lantana)
- Muhlenbergia rigens (Deer Grass)
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- Ceanothus griseus horizontalis (Carmel Creeper)
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- Cistus hybridus (White Rockrose)
- Romneya coulteri (Matilja Poppy)
- Rosa californica (California Wild Rose)
- Fuel Modification Zone A
- Fuel Modification Zone B
- Fuel Modification Zone C
- Special Maintenance Area - Hydroseed Mix
- Roadway Medians & Isla
- Water Quality Swale - Fescue
- Decomposed Granite
- Roadside Brush Clearance
- Proposed Vineyards
- Hydroseed Mix Species

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SOURCE: Robert Mitchell & Associates, 2014

The Preserve at San Juan

Figure 2-11
Phase 2 (North Parcel)
Conceptual Landscape Plan

Project Entries

The project entries are intended to identify the project entrance from the surrounding area and provide an aesthetically positive image of the project. Areas of mown Fescue turf would be located on each corner with a backdrop of layered shrubs and poplar trees. To coordinate with the natural environment of Long Canyon Creek, native California Sycamores would be planted in the medians that split the entry drive area.

Fuel Modification Zone A

A fuel modification zone is an area of land where combustible vegetation has been removed and/or the area is modified with drought-tolerant, fire-resistant plants to provide protection from fires. Fuel modification Zone A would be located on the flat pad portions of the residential lots and would vary from 15 to 100 feet in width, depending on the size, location and configuration os each residential lot. This area would not be developed or improved by developer. However, landscaping in this area would be restricted to specific guidelines per the Fuel Modification Plan, and an approved plant palette would be provided with plants having either a Low or Moderate water use rating, which would be included in the project's CR&Rs that would be implemented by the Homeowners Association.

Fuel Modification Zone B

Fuel modification Zone B would be the primary fuel modification zone, and would extend a minimum of 150 feet from the end of Zone A. Zone B would include manufactured slope areas, natural open space, and/or vineyards. This zone would be irrigated, and landscaping would be installed in accordance with the Fire Marshal's criteria. The plant material would be selected from two different plant palettes approved by the Fire Marshal and plants would be installed in a manner and density consistent with the Fuel Modification Plan's requirements.

The two different planting palettes would be utilized. The area of Fuel Modification Zone 'B' closest to the residences would be mostly irrigated with subsurface drip irrigation lines and treated effluent from the onsite wastewater treatment systems that would be located on each residential lot. The plant palette would be comprised of moderate water use plants, which would provide for the disposal of the treated effluent. During warmer months when treated effluent quantity may not be sufficient to meet irrigation needs, supplemental irrigation with domestic water supply would be provided to ensure proper plant health, vitality and moisture content in conformance with this zone's fuel modification requirements.

The Fuel Modification Zone 'B' areas that are farther from residences and would not treat effluent would utilize domestic water for irrigation purposes, and would be landscaped with a plant palette of 'Low' water use plants, which would conserve water and meet the Fuel Modification requirements.

Trees within the Fuel Modification Zone 'B' areas would be grouped in clusters of no more than three, with a 30-foot separation from the projected mature canopy of the cluster to any other tree and/or cluster. Shrubs would be planted in clusters of no more than three with a minimum 10-foot separation from the projected mature canopy of the cluster to any other tree and/or shrub cluster.

The ground cover would consist of existing plant material that has been thinned as required by the Fire Marshal or a hydroseeded mix of low ground cover plantings that have low fuel content as approved by the Fire Marshal.

Vineyards

The Fuel Modification Zone 'B' area includes 34.5 acres of vineyards throughout both phases of the project that would provide fuel modification while contributing to the aesthetic quality and character of the site. The vineyards would be planted on the existing natural terrain of the project site. The land would be substantially cleared and vines would be planted in rows at 12-feet on center with vines at every six feet along a steel and wire trellis element. The vines would be irrigated by means of the drip or bubbler system providing efficient irrigation. The ground plane would be kept virtually bare, with only low growing grasses and ground cover so as not to compete with the vines nor inhibit tending the vines. In addition, vineyard related service roads and paths would be developed, which would provide unimpeded emergency access to these areas.

The vineyards would not include wine making facilities. Grapes grown onsite would be harvested and sold. The vineyards would be owned, operated/maintained by the project's homeowner's association (HOA). HOA fees and funds from grape sales would pay for the operation and maintenance of the vineyards. Homeowners would not be individually responsible for vineyards, other than through payment of HOA fees. It is estimated that five employees would be needed on a year-round basis (daily) to oversee the vineyard production, with peaks of up to 25 employees needed during harvest season.

Manufactured Slopes

All manufactured slopes would be planted and irrigated to help stabilize the slope area and retain the appropriate moisture content, and would be part of the Fuel Modification Zone B area. The plant material would be selected from a plant palette approved by the Fire Marshal and the plants would be installed in a manner and density consistent with the Fuel Modification Plan requirements. Five and/or 15-gallon trees would be grouped in clusters of no more than three plants with a 30-foot separation from the projected mature canopy of the cluster to any other tree and/or cluster. Shrubs would be planted in clusters of no more than three with a minimum 10-foot separation from the projected mature canopy of the cluster to any other tree and/or shrub cluster. The ground cover would be hydroseeded with a mix of low-growing ground cover plantings that have low fuel content to them that would be approved by the Fire Marshal.

Fuel Modification Zone C

This zone consists of the last 50 feet of fire protection that would be between 150 and 200 feet from the proposed residences. No new plantings or irrigation are proposed for these areas; however, existing plant material would be thinned per the Fuel Modification Plan. No vineyards, new plantings, or irrigation would be installed in Zone C area, unless it falls within a manufactured slope area. When this occurs, the landscaping would be consistent with the proposed approach and treatment for manufactured slope areas described below.

Roadside Fuel Modification

Roadside fuel modification areas would consist of a 50-foot wide alignment on both sides of the streets and roads within the project site that would be in accordance with the Fuel Modification Plan. The roadside areas would be selectively thinned. In addition, many roadside areas would be disturbed due to project grading operations that would require vegetation removal or the development of graded slopes, swales, and other such improvements. In these instances, the areas would be treated it in the same manner as the vegetated swale or the manufactured slopes categories. If any new trees or shrubs are planted, it would be done in the clusters and spacing previously described under Fuel Modification Zone B.

2.7.4 Open Space

As described above, development of the proposed residential uses and onsite street system would be clustered in tracts close to Long Canyon Road, and in areas where existing topography is suitable for development. Large portions of the project site would be dedicated for undeveloped open space. As shown in **Table 2-1**, the project includes 414.6 acres (71 percent of the project area) of open space, which does not include vineyards, landscaping, and fuel modification areas. The open space portion of the project includes large areas of chaparral habitat, over 30 acres of coast live oak woodland and coast live oak forest, and two USGS blueline streams. The residences would be clustered to minimize the area of grading and fuel modification. In addition, the vineyards, landscaping, and fuel modification provide additional open space areas (included in the development area statistics and not included in the 414.6 acres) and a vegetative buffer between the development and preserved open space areas, that would be comprised of non-invasive species, many of which would be native.

2.7.5 Fire Protection

Since the project site is located within an Adopted Very High Fire Hazard Area (Calfire, 2011) a fuel modification plan is required. Per Guideline C-05 of the OCFA, which complies with the requirements of Section 317 of the California Fire Code, development within high fire hazard areas are required to incorporate fuel modification zones into site plans. In addition, the Riverside County Municipal Code Chapter 8.32, Fire Code, provides requirements to reduce the potential of fires that include vegetation management. Thus, a Fire Behavior Analysis Report, a Fuel Modification Plan, and a Fire Master Plan were prepared to cover all fire-related issues for the project area into one comprehensive document, which was approved in September 2016 by the Orange County Fire Authority (OCFA).

The Fuel Modification Plan and a Fire Master Plan identifies areas in both Orange and Riverside Counties where combustible vegetation would be removed or modified with drought-tolerant, fire-resistant plants to provide protection from wildlands fires. The minimum width of the fuel modification areas is 170 feet, and in some cases, the width increases due to type of terrain and/or type and mass of vegetation. As described previously, the Fuel Modification Plan designates three fire zones throughout the project area and is consistent with the California Fire Code, OCFA Guideline C-05, and Riverside County Municipal Code Chapter 8.32, Fire Code. Figure 2-10 and

Figure 2-11 show the fuel modification zones on Phase 1 (south parcel) and Phase 2 (north parcel).

2.7.6 Water Services

Water service for potable use, irrigation, and fire flow would be supplied by the Elsinore Valley Municipal Water District (EVMWD). As described above, approximately 133.4 acres of the project site (portions of the site needing domestic water service) would be annexed into the EVMWD, Western Municipal Water District, and MWD service areas. Areas of the project site that would remain in natural open space, and Fuel Modification Zone C areas, and other areas that would not be irrigated would not be annexed into the water service area.

Water would be provided to serve the residential uses and irrigated landscaping areas. Water for construction activities would be provided by an existing well on the project site. **Tables 2-2** and **2-3** show estimated water demand rates for construction and operation, respectively.

TABLE 2-2
PROPOSED PROJECT CONSTRUCTION WATER DEMAND

Project Phase	Approximate Maximum Water Demand (gallons)
Phase 1 (south parcel)	3,608,700
Phase 2 (north parcel)	2,549,550
Total	**6,158,250**

TABLE 2-3
PROPOSED PROJECT OPERATIONAL WATER DEMAND

Development	Approximate Maximum Water Demand (gallons per day)
Phase 1 (south parcel)	
Roadway medians, swales, and slopes	60,211
Fuel modification zones (A and B)	78,743
Vineyards	42,169
Residential Water (43 lots)	25,800[1]
Subtotal	*206,923*
Phase 2 (north parcel)	
Roadway medians, swales, and slopes	41,610
Fuel modification zones (A and B)	43,467
Vineyards	26,728
Residential Water (29 lots)	17,400[1]
Subtotal	*129,205*
Total Water Demand	**336,128**

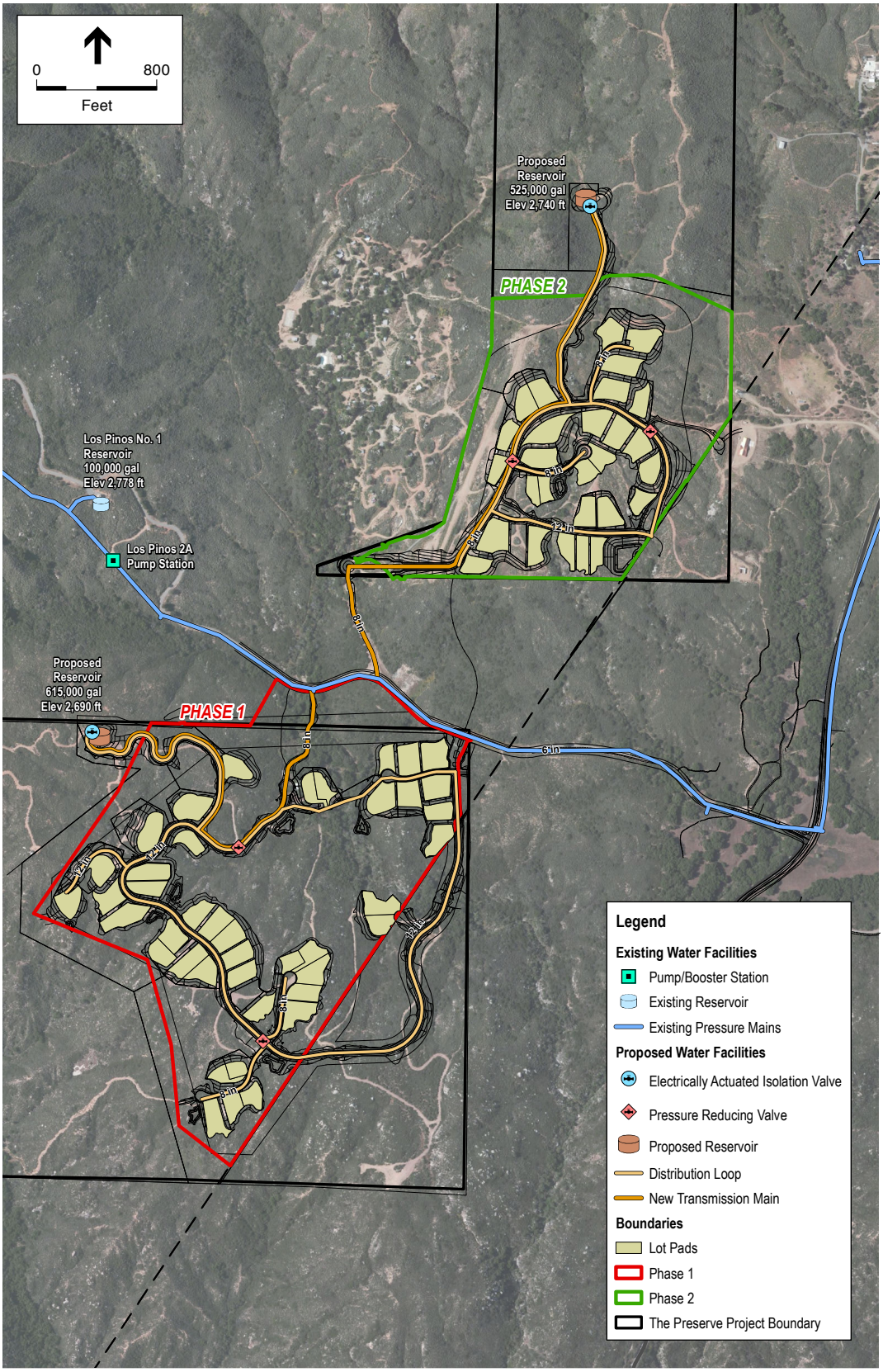
[1] Calculated based on a generation rate of 600 gallons per day (gpd) per lot per EVMWD recommendations.
Source: Robert, 2014; PACE, 2014.

The proposed project includes on-site and off-site improvements to the EVMWD infrastructure system. All of the off-site water distribution improvements would occur within the existing EVMWD right-of-way adjacent to the existing six-inch water transmission main. The existing six inch main starts from the Tomlin No. 1 Booster Station, which is west of the City of Lake Elsinore, and travels southwest to provide potable water to communities along Ortega Highway, including El Cariso Village. The existing transmission main runs adjacent to the north portion of the project site along Ortega Highway, and then intersects the project site as it travels west along Long Canyon Road to its terminus at the 100,000 gallon Los Pinos No. 2 Reservoir, located west of the project site at an elevation of approximately 3,500 feet.

The new on-site water distribution facilities would include a 12-inch distribution line that would be constructed throughout the developed portions of the project site during each construction phase. In addition, a 615,000-gallon and a 525,000-gallon water storage tank would be installed (in each phase) to provide emergency water and fire suppression supplies. The size of the tanks has been coordinated with OCFA and EVMWD to ensure appropriate capacity to meet potential demands. The reservoir site on the Phase 1 (south parcel) would be 615,000 gallons and would be located in the northwestern-most portion of the Phase 1 (south parcel) development area. The reservoir in the Phase 2 (north parcel) would be 525,000 gallons and would be located at the far northern end of the Phase 2 (north parcel). **Figure 2-12** shows the proposed water distribution system for the project, including the water storage tanks, which would be sited at elevations sufficient to provide water to their respective development phases, in order to minimize the use of booster stations. New distribution mains from each reservoir would be installed to provide water to their respective development phases, and would be sufficiently sized based on peak flow demand and fire-flow requirements.

2.7.7 Wastewater Systems

Wastewater generated by the project would be treated and disposed of through the use of onsite wastewater treatment systems located on each lot. The onsite wastewater treatment systems installed on each lot would consist of three components: (1) a 1,500-gallon septic tank; (2) three modular peat fiber biofilters; and (3) a 300-gallon water reuse pump station. In addition, a 1,500-gallon emergency storage tank would be part of the water reuse pump station. The septic tank would provide primary treatment of the wastewater and settle out solids. From the septic tank, effluent would flow to a dosing tank and be pumped to the biological peat filtration system for secondary treatment via an aerobic attached growth process (contaminants would be physically absorbed onto the peat fiber and digested by naturally-occurring microbes). Treated effluent would then flow by gravity to the water reuse pump station, and then be pumped to subsurface dispersal irrigation fields on fill slopes and natural areas to irrigate portions of the Zone B fuel modification area. Approximately 320 gallons per day would be emitted for irrigation of approximately 13,100 square feet; treated effluent would be supplemented with freshwater to meet this irrigation demand when necessary.



SOURCE: ESRI

The Preserve at San Juan

Figure 2-12

Proposed Water Distribution System

The proposed septic tanks were sized based on the number of bedrooms serve per the California Plumbing Code (1,500-gallon tank sizes are based on Code requirements for five bedroom units). The septic tanks, biofilters, reuse water pump stations and emergency storage tanks would be setback pursuant to existing regulations of the California Plumbing Code, State Water Resources Control Board (SWRCB) Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems, San Diego Regional Water Quality Control Board (RWQCB), Orange County Regulations for Wastewater Treatment and Disposal Systems, and Orange County On-Site Sewage Absorption System Guidelines that provide specific setbacks, such as a minimum of 100 feet between streams and graywater irrigation areas, 15 feet from slopes of two feet or more, and 10 feet from property lines. In addition, these regulations provide regulations related to soil conditions in areas where onsite wastewater systems are used.

High water alarms would be included in each system to alert homeowners and the HOA of high water level conditions prior to a potential overflow event. In addition, an emergency storage tank (to ensure overflows would not occur) would be part of each system. A description of the onsite wastewater treatment systems and compliance with federal, state, RWQCB, and County standards is provided in Section 3.9, *Hydrology and Water Quality* of this EIR.

2.7.8 Home Owners Association Services

The project includes development of a Home Owners Association (HOA) that would be established to provide maintenance for and fund the following:

- Onsite roadways
- Open space areas
- Landscaping within common areas
- Oak trees
- Fuel modification zones
- Vineyards
- Irrigation facilities and grey water irrigation areas
- Community and neighborhood entries and signage
- Community perimeter walls and fencing
- Landscape of slopes internal to the development areas
- Common area lighting
- Implementation of CR&Rs

Covenants, Conditions, and Restrictions (CC&Rs) would be implemented by the HOA as a means of ensuring and enforcing quality design during development and the level of maintenance of common areas, such as the vineyards and fuel modification zones. To appropriately maintain all fuel modification areas CC&R's would include an Orange County Fire Authority (OCFA) approved annual self-inspection procedure and certification of the HOA by an outside consultant

to ensure adequate and timely maintenance of all fuel modification zones as well as oversight by OCFA. This would include an approved plant palette for residential homeowners to use.

2.8 Project Design Features

The proposed project has been designed to incorporate a number of Project Design Features that would prevent or lessen potentially significant environmental impacts associated with the proposed project (see **Table 2-4**). These Project Design Features will be included in the Mitigation Monitoring and Reporting Program and would be monitored to ensure completion, in the same manner as project mitigation measures.

TABLE 2-4
PROJECT DESIGN FEATURES

No.	Design Feature
PDF-1	Open space within the Preserve accounts for 414.6 acres or approximately 71 percent of the project site, which will be offered for dedication to the U.S. Forest Service.
PDF-2	Open space would be concentrated in the western and northern portions of the project site and the single-family residences would be clustered toward Long Canyon Road to create a buffer between the residential uses and the Cleveland National Forest lands to avoid or minimize potential environmental impacts.
PDF-3	The project has been designed to develop the flatter portions of the project site. However, some hills will be lowered and some valleys raised to create level building pads. This design will maintain similar topographic characteristics as the existing condition.
PDF-4	A conceptual landscape plan for the project has been prepared by a licensed landscape architect pursuant to the County's Standard Plans for landscape areas, adopted plant palette guides, OCFA requirements, and water conservation measures. The conceptual landscape plan has been designed to preserve open space areas and provide landscaping that would assist in carbon intake and minimize surface water runoff, incorporate the use of native/drought tolerant plant materials, avoid the use of invasive plants, and utilize only a small percentage of turf in the common landscape areas.
PDF-5	In accordance with the Tree Management Preservation Plan that was prepared by certified arborists, oak tree relocations will be within the project site, and monitoring will be performed following all tree plantings and relocations for a period of seven years. Oak trees will be maintained by the Homeowners Association as part of the project's covenants, conditions and restrictions.
PDF-6	Interior private streets have been designed to rural street standards, with no sidewalks and rolled curbs (except at the main entry where standard curbs will be used to control drainage). The paved widths of interior streets have been designed to have a minimum paved width of 28 feet to 32 feet.
PDF-7	The project has been designed to include an eastbound left-turn lane (300-foot storage length), a westbound right-turn lane (320-foot storage length), and a westbound acceleration on Ortega Highway at the intersection of Long Canyon Road.
PDF-8	Roads within the project site will be privately owned and maintained. Stop signs, stop bars, and stop legends will be provided for vehicles exiting the project phases at the intersection of Long Canyon Road. The gated entries to both Phases will be constructed and setback from Long Canyon Road at a distance that complies with the Orange County Standard Plan No. 1107, which is a minimum of 100 feet from the curb line of Long Canyon Road, to provide adequate vehicle stacking space.
PDF-9	The project circulation has been designed to be consistent with the County's design components of the General Plan-adopted Viewscape Typical Section including: an enlarged parkway, a hiking trail, and a lack of curbs.
PDF-10	The project includes a Fuel Modification Plan that is required to provide a landscape transition area along the interface between residential development and adjacent onsite open space areas to provide wildfire protection. Plant species for landscaping will be in accordance with the Orange County Fire Authority plant palettes and use predominantly native species.

PDF-11 The project includes a Fire Master Plan that was reviewed and approved by the Orange County Fire Authority. The Fire Master Plan provides enhanced construction features, requirements for fuel modification zones, and requirements for enhanced fire sprinkler systems per California Building Code Chapter 7A.

PDF-12 In order to minimize project hazards relative to vector control and public health concerns and comply with the Municipal Separate Storm Sewer System permit, the infiltration basins will be designed for a maximum 72-hour draw down period for retained runoff. The infiltration basins will employ approved vector control treatment measures as specified in the California Department of Public Health's recommendations for best management practices for mosquito control in collaboration with the Orange County Vector Control District to mitigate potential vector issues.

PDF-13 The project has been designed to mimic the hydrological characteristics of the site in its natural, undeveloped state through clustering the residential sites, controlling development flows (runoff) with vegetated swales; infiltration basins; the incorporation of low impact development principles; and preserving the site's main drainage along the easterly boundary; thereby adhering to hydromodification requirements established by the current Municipal Separate Storm Sewer System Permit.

- The project has been designed so that the design capture volume will be collected and infiltrated on-site. This amount will be retained and would not discharge off-site.
- The design capture volume would remain within the basin; any volume in excess of infiltration basin capacity would be allowed to discharge from the basins via the spillway.
- For areas where vegetated swales alone can account for the hydromodification, the downstream basins only capture and infiltrate the design capture volume.

PDF-14 The project has been designed to implement the following Low Impact Development techniques:

- Conservation of natural areas, including existing trees, other vegetation and soils.
- Keeping streets at minimum widths and eliminating paved sidewalks in parkways.
- Minimizing the impervious footprint of the project.
- Minimizing disturbances to natural drainages.
- Providing vegetated swales for water quality purposes.

PDF-15 The project has been designed to include the following Best Management Practices to promote infiltration and slow down surface flows:

- Impervious area dispersion.
- Inclusion of native drought-tolerant landscaping/efficient irrigation.
- Providing vegetated swales for hydromodification purposes.

PDF-16 The project includes a Hydrology Analysis that demonstrates that the proposed development would not overload existing drainage facilities downstream of the project site or exceed existing runoff velocities and peak discharge at discharge points for the 2-, 5-, 10-, 25-, and 100-year storm events.

PDF-17 The project includes a Conceptual Water Quality Management Plan (WQMP) that has been prepared to identify preliminary best management practices (BMPs), to control pollutant runoff. The WQMP has been based on the Orange County Drainage Area Management Plan, Model WQMP, Technical Guidance Manual, and the County's WQMP template. The WQMP includes the following:

- Detailed site and project description.
- A description of potential stormwater pollutants.
- Post-development drainage characteristics.
- Low impact development BMP preliminary selection and analysis.
- Preliminary structural and non-structural source control BMPs.
- Preliminary site design and drainage plan.
- GIS coordinates for all proposed LID and treatment control BMPs.
- Preliminary Operation and Maintenance Plan that: (1) describes the long-term operation and maintenance requirements for BMPs; (2) identifies the entity that will be responsible for long-term operation and maintenance of the referenced BMPs; and (3) describes the mechanism for funding the long-term operation and maintenance of the referenced BMPs.

PDF-18 Approximately 133.4 acres of the project site (portions of the site needing domestic water service) would be annexed into the Elsinore Valley Municipal Water District, Western Municipal Water District, and Metropolitan Water District service areas to provide water services. Areas of the project site that would remain in natural open space or are within the fuel modification areas that do not require irrigation, would not be annexed into the water service area.

PDF-19 The project includes two water storage tanks (one 615,000-gallon tank and one 525,000-gallon tank), to provide emergency storage to the residents of the project. The tanks will be visually screened with native/drought-tolerant landscaping and will be painted a neutral tone to blend with the surrounding environment.

PDF-20 Best management practices will be incorporated into the project to ensure that indirect impacts (i.e., edge effects) are avoided or minimized to the maximum extent possible. Utilization of "night sky friendly" light fixtures shall be used, lighting will be pointed away from offsite areas, and ambient light levels will be minimized to the maximum extent practicable.

PDF-21 Construction activities will be limited to the hours between 7:00 a.m. to 8:00 p.m., Monday through Saturday, excluding federal holidays, per the County's Noise Ordinance (Section 4-6-7). Additionally, the following measures will be implemented to reduce construction-related noise:

- Construction activities will be limited to the hours between 7:00 a.m. to 5:00 p.m., Monday through Saturday, excluding federal holidays, which is consistent with the County's Noise Ordinance.
- During all excavation and grading on-site, the construction contractors will equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards to reduce construction equipment noise to the maximum extent practicable. The construction contractor will place all stationary construction equipment so that emitted noise is directed away from noise sensitive receptors.
- The construction contractor will stage equipment and material stockpiles in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors during project construction.
- The construction contractor will limit haul truck deliveries to the same hours specified for construction equipment.
- Electrically powered equipment to be used instead of pneumatic or internal combustion powered equipment, where feasible.
- Unnecessary idling of internal combustion engines (e.g., in excess of 5 minutes) will be prohibited.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only

PDF-22 Protection measures for oak trees include fencing and protection of oak trees adjacent to construction areas. Placement of fill, storage of equipment, and grading will be prohibited within the dripline of any tree proposed for preservation. Retaining walls will be used to protect oaks proposed for preservation from surrounding cut and fill and any retaining walls will be placed outside of the root zone of the oak tree to be preserved.

2.9 Construction Activities and Schedule

Construction activities for the proposed project would occur in the following stages on Phase 1 (south parcel) first, and then on Phase 2 (north parcel) site): (1) site preparation; (2) grading and excavation; (3) construction of drainage, utilities, and subgrade infrastructure; (4) building construction; and (5) paving and application of architectural coatings. Grading for the project would be balanced on-site, meaning that no import or export of excavated soil would be required. Phase 1 (south parcel) would require 313,800 cubic yards of cut and fill and Phase 2 (north parcel) would require 221,700 cubic yards of cut and fill. Total excavation over both phases is estimated at 535,500 cubic yards, with 10,000 cubic yards to be excavated on a maximum day.

Table 2-5 shows the anticipated construction schedule and effort for the proposed project. Construction activities for Phase 1 (south parcel) are anticipated to take 18 months from beginning to end.

At the completion of Phase 1 (south parcel) construction, activities would commence on Phase 2 (north parcel). Each of the construction phases would be the same, but would be shorter in duration. Construction activities for Phase 2 (north parcel) are anticipated to take 14 months from beginning to end. However, build out of Phase 1 (south parcel) is dependent on economic factors including housing market conditions at the time of construction. Construction activities would be limited to the hours allowable by the Orange County Municipal Code Section 4-6-7, which are between 7:00 a.m. to 8:00 p.m., Monday through Saturday, excluding federal holidays, as included in Project Design Feature PDF-21.

TABLE 2-5
CONSTRUCTION STAGES AND DURATION

Construction Stage	Workers (Max)	Duration (Work Days)
Phase 1 (south parcel)		
Site Preparation	5	45
Grading/Excavation	15	120
Drainage/Utilities/Sub-Grade	10	90
Building Construction	50	120
Paving	6	30
Architectural Coatings	4	30
Phase 2 (north parcel)		
Site Preparation	5	30
Grading/Excavation	15	90
Drainage/Utilities/Sub-Grade	10	70
Building Construction	50	90
Paving	6	20
Architectural Coatings	4	20

2.10 Project Approvals and Intended Uses of the EIR

The proposed project includes a request for approval of the following discretionary and other implementing approvals, which are provided in the order in which they would occur:

- Area Plan to be approved by the County of Orange.
- General Plan land use designation amendment change from Open Space (OS) to Rural Residential (1A) to be approved by the County of Orange.
- Zone change from "General Agriculture" (A1) to "Agricultural Residential" (AR) to be approved by the County of Orange.
- Annexation of 133.4 acres of the project site into the Elsinore Valley Municipal Water District, Western Municipal Water District, Metropolitan Water District to be approved by Riverside LAFCO.

- Vesting Tentative Tracts 17269 and 17270 for subdivision of the project site to be approved by the County of Orange.
- Grading Permit(s) (required prior to clearance of vegetation and earthwork on the project site) to be approved by the County of Orange.
- Building and roadway permits required and to be approved by the County of Orange.

In addition to the County of Orange, Other agencies that may utilize this EIR to provide permits and approvals that may be required include the following:

- Riverside County LAFCO water district annexations
- EVMWD for annexation
- Western for annexation
- MWD for annexation
- Riverside County: Grading and Roadway Development Permits
- U.S. Army of Corps of Engineers (USACE): Clean Water Act (CWA) Section 404 Permit
- U.S. Fish and Wildlife Service (USFWS): Endangered Species Act Section 7 Consultation
- California Department of Fish and Wildlife (CDFW): Streambed Alteration Agreement
- California Regional Water Quality Board (RWQCB): Construction General Permit, CWA Section 401 Permit
- California Department of Transportation (Caltrans): Rights-of-Way Encroachment Permit

CHAPTER 3

3.01 Environmental Setting, Impacts, and Mitigation Measures

This chapter focuses upon evaluating the significant environmental effects of proposed Preserve at San Juan Project (proposed project), which is described in Chapter 2, *Project Description*. This Chapter describes the existing physical environmental setting (also referred to as "baseline") for each environmental topic, and the impacts that would result from implementation of proposed project. Because existing federal, state, and local regulations also will shape how the proposed project is implemented and provides requirements for avoiding and reducing environmental impacts, a discussion of relevant plans, programs, and policies pertinent to each environmental issue addressed in each environmental topic section is provided. Additionally, as necessary, feasible mitigation measures are identified to reduce the significant impacts of proposed project.

Environmental Topics

The following sections in this chapter analyze the environmental topics listed below:

- 3.1 Aesthetics
- 3.2 Agriculture and Forest Resources
- 3.3 Air Quality
- 3.4 Biological Resources
- 3.5 Cultural Resources
- 3.6 Geology and Soils
- 3.7 Greenhouse Gas Emissions
- 3.8 Hazards and Hazardous Materials
- 3.9 Hydrology and Water Quality
- 3.10 Land Use and Planning
- 3.11 Noise
- 3.12 Population and Housing
- 3.13 Public Services
- 3.14 Recreation
- 3.15 Transportation and Traffic
- 3.16 Utilities and Service Systems

This EIR evaluates the direct and indirect impacts resulting from construction and ongoing operations of the proposed project. Under CEQA, EIRs are intended to focus their discussion on significant impacts, and may limit discussion of other impacts to a brief explanation of why the impacts are not significant. As discussed in Chapter 6, *Impacts Found Not to Be Significant*, the proposed project would have no effect on mineral resources because no known mineral resources are located in the project vicinity. Therefore, CEQA does not require further detailed evaluation of mineral resources. In addition, consistent with CEQA Guidelines Section 15128, other thresholds within the environmental topics listed above were determined to have no effect related to the project; the details of which are provided in Chapter 6, *Impacts Found Not to Be Significant* and within the Notice of Preparations/Initial Studies (included as Appendices A1 and A2).

Determinations that impact would be less than significant were also reached for certain significance criteria related to the environmental topics listed above. These determinations and the accompanying analysis are presented as part of the impact assessments for individual environmental topics.

Format of Environmental Topic Sections

Each environmental topic section in this Chapter generally includes the following main subsections:

- *Environmental Setting*, describing the existing physical environmental conditions (environmental baseline) related to the environmental topic being analyzed.
- *Regulatory Setting*, describing applicable federal, state, and local plans, policies, and regulations that the proposed project must address, and will shape its implementation.
- *Thresholds of Significance*, setting forth the thresholds of significance (significance criteria) used to determine whether impacts are "significant."
- *Methodology*, A description of the methods used to analyze the impact and determine whether it would be significant or less than significant.
- *Project Impacts and Mitigation*, setting forth and analyzing one or more impact statements for each identified significance threshold. The analysis of each impact statement is organized as follows:
    - A statement of the CEQA threshold being analyzed,
    - The EIR's conclusion as to the significance of the impact.
    - An impact assessment that evaluates the changes to the physical environment that would result from proposed project.
    - An identification of significance comparing identified impacts of the proposed project to the relevant significance threshold, prior to implementation of any required mitigation.
    - For each impact determined to be potentially significant, feasible mitigation measure(s) to be implemented are provided. Mitigation measures include enforceable actions to:
        - avoid a significant impact;
        - minimize the severity of a significant impact;
        - rectify an impact by repairing, rehabilitating, or restoring the effected physical environment;
        - reduce or eliminate the impact over time through preservation and/or maintenance operations during the life of the project; and/or
        - compensating for the impact by replacing or providing substitute resources or environmental conditions.
    - Actions to be taken to ensure effective implementation of required mitigation measures.
    - Analysis as to the effectiveness of identified mitigation measure(s) to avoid or reduce significant impacts to a less than significant level.

Environmental Setting/Baseline

The "Environmental Setting" subsections describe current conditions with regard to the environmental resource area reviewed. CEQA Guidelines Section 15125 states that "*An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time the environmental analysis is commenced, from both a local and regional perspective. The environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to gain an understanding of the significant effects of the proposed project and its alternatives.*"

CEQA Guidelines and case law recognize that the date for establishing an environmental baseline cannot be rigid (see CEQA Guidelines Sections 15146, 15151, and 15204). In some instances, information is presented in the environmental setting that differs from the precise time of the Notice of Preparation (NOP). This information is considered representative of baseline conditions. Furthermore, environmental conditions may vary from year to year, and in some cases it is necessary to consider conditions over a range of time periods.

Two Notice of Preparations and Initial Studies were published for the proposed Preserve at San Juan Project. A Notice of Preparation/Initial Study was prepared and distributed on September 26, 2013. In addition, a revised Notice of Preparation/Initial Study was circulated on October 16, 2014 in response to changes to the project description regarding the number of residential units and wastewater treatment systems, which occurred in response to the findings of technical studies that were completed for the proposed project. Thus, studies related to evaluation of the existing environment and potential impacts of the proposed project occur from 2013 through 2016. The baseline conditions relevant to the environmental issues being analyzed are described within each subsection in this Chapter. In some cases, (such as in Section 3.1, *Aesthetics*), discussion of baseline conditions is also provided in the impacts analyses to provide context for the impact in the most reader-friendly format and organization.

Thresholds of Significance/Significance Criteria

CEQA Guidelines Section 15382 defines a significant effect on the environment as "*a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.*"

The "Thresholds of Significance" subsections provide the specific thresholds of significance by which impacts are judged to be significant or less than significant in this EIR. These include identifiable quantitative or qualitative standards or sets of criteria pursuant to which the significance of each given environmental effect can be determined. Exceedance of a threshold of significance normally means the effect will be determined to be "significant" (CEQA Guidelines Section 15064.7(a)). However, an iron-clad definition of a "significant" effect is not always possible because the significance of an activity may vary with the setting (CEQA Guidelines Section 15064(b)). Therefore, a Lead Agency has the discretion to determine whether to classify an impact described in an EIR as "significant," depending on the nature

of the area affected. The thresholds of significance used to assess the significant of impacts are based on those provided in Appendix G of the CEQA Guidelines.

Impact Significance Classifications

The following classifications are used throughout the impact analysis in this EIR to describe the level of significance of environmental impacts:

- **Significant Impact** - A significant impact is defined by Section 15382 of the CEQA Guidelines as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself "shall not be considered a significant effect on the environment … [but] may be considered in determining whether the physical change is significant." As defined in this EIR, a significant impact exceeds the defined significance criteria and therefore requires mitigation.
- **No Impact** – No adverse effect on the environment would occur, and mitigation measures are not required.
- **Less than Significant Impact** – The impact does not reach or exceed the defined threshold (criterion) of significance. Therefore, no mitigation is required.
- **Less than Significant Impact with Mitigation Incorporated** – The impact reaches or exceeds the defined threshold (criterion) of significance, and mitigation is therefore required. Feasible mitigation measures, including standard conditions of approval, when implemented, will reduce the significant impact to a less-than-significant level.
- **Significant and Unavoidable Impact** – The impact reaches or exceeds the defined threshold (criterion) of significance, and mitigation is therefore required. However, application of all feasible mitigation measures and standard conditions of approval would not reduce the impact to a less-than-significant level.

While CEQA requires that an EIR identify all feasible mitigation to avoid or reduce the significant impacts of a project, it also permits public agencies to approve a project even though it would result in one or more significant unavoidable environmental effects. For a Lead Agency to approve project with one or more significant unavoidable impacts, it must first prepare a statement of overriding considerations, which identifies the specific economic, legal, social, technological, or other benefits of the project, including region-wide or statewide environmental benefits, that outweigh its significant unavoidable effects, and thereby warrant its approval (Public Resources Code Section 21083; CEQA Guidelines Section 15093). The statement of overriding considerations must be supported by substantial evidence in the record (CEQA Guidelines Section 15093(a)).

3.02 Cumulative Impacts

Cumulative impacts refer to the combined effect of the proposed project's impacts with the impacts of other past, present, and reasonably foreseeable probable future projects. Both CEQA and the *CEQA Guidelines* require that cumulative impacts be analyzed in an EIR. As set forth in the *CEQA Guidelines* Section 15130(b), "*the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone*." CEQA Guidelines direct that the discussion should be guided by practicality and reasonableness, and focus on the cumulative impacts that would result from the combination of the proposed project and other projects, rather than the attributes of other projects which do not contribute to cumulative impacts.

According to Section 15355 of the *CEQA Guidelines*,

> *"'Cumulative impacts' refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*
>
> *a) The individual effects may be changes resulting from a single project or a number of separate projects.*
>
> *b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."*

Therefore, the cumulative discussion in this EIR focuses on whether the impacts of the proposed project are cumulatively considerable within the context of impacts caused by other past, present, and reasonably foreseeable future projects.

Additionally, pursuant to CEQA Guidelines Section 15130(a)(1), an EIR should not discuss cumulative impacts that do not result at least in part from the project being evaluated in the EIR. Thus, cumulative impact analysis is not provided for any environmental issue where the proposed project would have no environmental impact. Analysis of cumulative impacts is, however, provided for all project impacts, whether they were determined to be significant and unavoidable, less than significant with implementation of mitigation measures, or less than significant.

CEQA Guidelines Section 15130(b)(1) states that the information utilized in an analysis of cumulative impacts should come from one of the following, or a reasonable combination of the two:

- A list of past, present and probable future projects producing related or cumulative impacts, including those projects outside the control of the lead agency; or
- A summary of projections contained in an adopted local, regional or statewide plan or related planning document that describes or evaluates conditions contributing to the cumulative effect.

The cumulative analysis for air quality, greenhouse gas emissions, and traffic relies on projections contained in adopted local, regional, or statewide plans or related planning documents, such as Southern California Regional Transportation Plan/Sustainable Communities Strategy and relevant regional plans developed by the Southern California Association of Governments (SCAG). The cumulative analyses for other environmental issues use the list of projects approach. The list of reasonably foreseeable future projects within the geographic scope of the impact analyses is based upon information provided by Orange and Riverside Counties, and the Cities of Lake Elsinore, Mission Viejo and Rancho Santa Margarita.

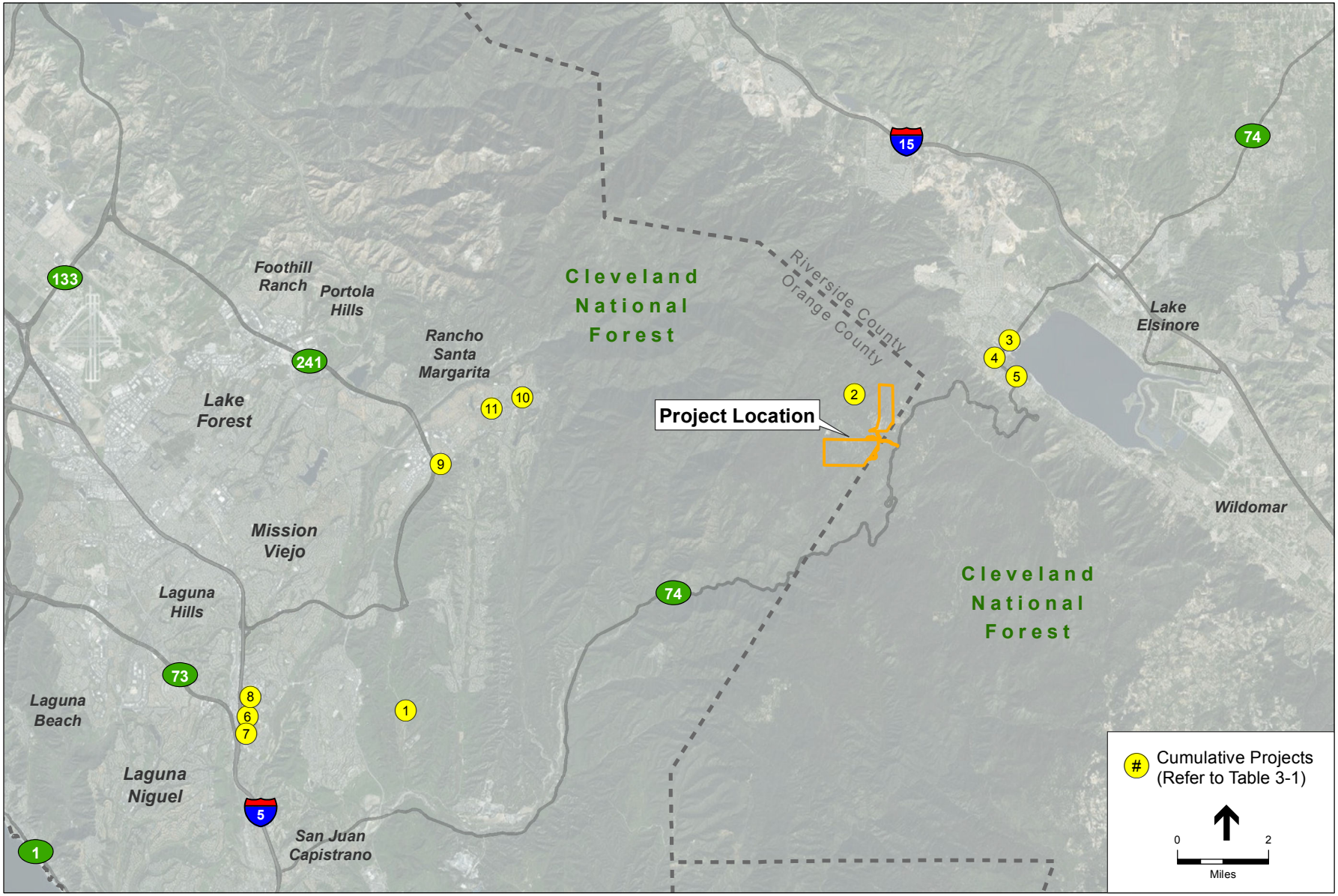
Different types of cumulative impacts occur over different geographic areas. For example, the geographic scope of the cumulative air quality analysis, where cumulative impacts occur over a large area, is different from the geographic scope considered for cumulative analysis of aesthetic resources, for which cumulative impacts are limited to specific viewsheds. Thus, in assessing aesthetic resources impacts, only development within and immediately adjacent to the project area would contribute to a cumulative visual effect is analyzed, whereas cumulative traffic impacts are based upon all development within the traffic study area of roadways and intersections. Because the geographic scope and other parameters of each cumulative analysis discussion can vary, the cumulative geographic scope, and the cumulative projects included in the geographic scope (when the list of projects approach is used), are described for each environmental topic. **Table 3-1** provides a list of projects considered in this cumulative environmental analysis, which was compiled per information provided by each agency, and **Figure 3-1** shows the locations.

TABLE 3-1
CUMULATIVE PROJECT LIST

	Name/Address	Description	Status
		County of Orange Projects	
1	The Ranch Plan Planned Community (Rancho Mission Viejo) Planning Area 2 Master Area Plan / Chiquita Canyon; east of Antonio Parkway and north of Ortega Highway	The recently approved Master Plan allows for the development of a maximum of 3,291 dwelling units, parkland, an urban activity center and a neighborhood center on 895 of the 1,680 total acres of Planning Area 2.	Approved.
		County of Riverside Projects	
	There are no pending, proposed or future Riverside County projects within the project vicinity.		
		US Forest Service	
	Long Canyon Road Improvement Project. The road was improved in 2016. Improvements included crack sealing, pavement patching, asphalt overlay, culvert repair and replacement, ditch reconditioning, signing and striping. Long Canyon Road has a 66-foot right-of-way and currently provides a paved width of 24-feet with a curb and gutter.		
		City of Lake Elsinore Projects	
2	Lakeshore Point / Corner of LeHarve Avenue and Riverside Drive	The multi-family residential project includes 150 units.	Approved.
3	The Villages at Lakeshore / Corner of Riverside Drive and Grand Avenue	This project includes a Specific Plan, Amendment (No. 1) and 163 condominium detached dwelling units on 19.7 acres.	Approved.

	Name/Address	Description	Status
4	Wake Rider Beach Resort / Northwest of the intersection of Grand Avenue and Kevin Place	Commercial mixed use consisting of five buildings totaling 62,437 square feet; including: 4,327 square foot retail/office building, three 18,303 square foot and a 19,274 square foot commercial buildings, 13,512 square feet for a hotel, and 7,022 square feet for a restaurant.	Approved.
	City of Mission Viejo Projects		
5	Hampton Inn and Suites Hotel / 28682 Marguerite Parkway	The project would demolish a 23,000-square-foot vacant retail building on a 1.69-acre site and construct a 101-room Hampton Inn and Suites.	Under construction through March 2017.
6	Green Street Shopping Plaza Project / 28662 Marguerite Parkway	The project would demolish two existing buildings totaling just under 9,000 feet on a 1.7-acre site currently utilized by a church to construct a two-level 17,700 square foot shopping plaza, auto spa and parking stalls.	Under construction through early 2018.
7	555 Shops at Mission Viejo	The project would develop an 111,000 square-foot medical office building (by NCA) with 5-level parking structure for 635 parking stalls on The Shops at Mission Viejo regional mall.	In application stage.
	City of Rancho Santa Margarita		
8	Chiquita Ridge / Bordered by Antonio Parkway on the west and Highway 241 on the east; south of Tijeras Creek Golf Club	The 92-acre project site currently consisting of open space has the potential to develop up to 55 acres. If said area is ever developed, an active sports park must be included at a minimum of 23 acres, leaving 32 acres for other potential uses.	Development potential approved. No projects proposing to develop on the site have been approved.
9	Robinson Ridge / East of the intersection of Trabuco Canyon Road and Trabuco Creek Road, south of Trabuco Creek Road, and west of the Cleveland National Forest boundary.	The 92-acre project site has the potential to develop up to 612 units, consistent with the Foothill/Trabuco Specific Plan.	Development potential approved. No projects proposing to develop on the site have been approved.
10	21522 Plano Trabuco Road	This project has been approved for 36 attached townhomes.	The project is currently under construction, anticipated completion is 2017.

Sources: Counties of Orange and Riverside, U.S. Forest Service, Cities of Lake Elsinore, Mission Viejo, Rancho Santa Margarita; 2017.



SOURCE: ESRI

The Preserve at San Juan

Figure 3-1

Cumulative Projects

3.1 Aesthetics

The purpose of this section is to analyze potential aesthetics impacts that could occur from the proposed project. This analysis identifies and evaluates key visual resources in the project area, determines the degree of visual impacts that could occur from project implementation, describes the potential aesthetic effects of project development on the existing landscape, and analyzes the compatibility of the proposed project on scenic resources pursuant to the California Environmental Quality Act (CEQA) requirements.

3.1.1 Environmental Setting

Existing Conditions

Visual Characteristics

The project site consists of two non-contiguous generally undeveloped parcels of land located in the Santa Ana Mountains and bordered by the Cleveland National Forest to the north, south, and west. Portions of the Cleveland National Forest land that are visible from the project area include undeveloped open space areas of steep slopes and ridges covered in dense chaparral and trees with some dirt roads.

Phase 1 (south parcel) is a vast 389.6-acre parcel that consists of gently sloping terrain in the southern portion of the parcel and steep, rugged terrain in the northern portion of the parcel. The majority of Phase 1 (south parcel) is undisturbed and contains views of dense chaparral, densely vegetated hills, and scattered patches of oak woodland. Long Canyon Creek crosses the southwest corner of the parcel, which is a dry creek bed most of the year. Due to the dense vegetation, and steep, rugged terrain many areas of the site are not closely visible; however, the Phase 1 (south parcel) provides large expansive views of natural topography, vegetation, and open space.

Disturbance areas are generally located in the northeastern portion of the south parcel and includes a network of dirt roads and trails, some cleared areas, one abandoned residence with a shed containing a water well and cistern. Therefore, views within Phase 1 (south parcel) contain rural abandoned disturbances. However, due to the distance between the disturbed areas and Ortega Highway, which is over 2,300 feet to the east, the currently disturbed areas within the Phase 1 (south parcel) are not visible from the highway.

Phase 2 (north parcel) contains views of gently sloping terrain in the northeast portion of the parcel and steep, rugged terrain in the remainder of the parcel. The majority of the parcel is undisturbed and supports dense chaparral with large rock outcroppings and areas of oak woodland. Long Canyon Creek crosses the northeast corner of the parcel and an unnamed stream bisects the center of the parcel from north to south. One residence is located just east of the boundary of Phase 2 (north parcel). Therefore, views of the Phase 2 (north parcel) is largely undeveloped vegetated open space, and views of rural residential development are adjacent to the parcel. Similar to the views within Phase 1 (south parcel), due to the dense vegetation, and steep,

rugged terrain many areas of the site are not closely visible; however, the Phase 2 (north parcel) provides large expansive views of natural topography, vegetation, and open space.

Existing disturbance areas within Phase 2 (north parcel) are generally located in the southern portion of the parcel and includes a network of dirt roads and trails, and a residence in the southwest corner of the parcel, near two water wells and several water storage tanks (one of them 8,000 gallons).

The southwestern portion of the Phase 2 (north parcel) also contains the previously used private McConville Airstrip (FAA Identifier CA42), which provides views of a gravel graded sloped surface that is approximately 1,000 feet long. A hangar/maintenance structure, bunker, and a shed are located adjacent to the private airstrip. In addition, several areas within Phase 2 (north parcel) are being used to store numerous dilapidated vehicles and debris piles. Due to the distance between the disturbed areas on Phase 2 (south parcel) and Ortega Highway, which is over 2,240 feet to the east, the currently disturbed areas are not visible from the Highway.

Scenic Vistas and Corridors

Public viewpoints near the project site include views from various areas in the Cleveland National Forest of the project site. Views of the project area can be seen from higher elevations areas to the north, such as near the U.S. Forest Service (USFS) EL Cariso Hotshot Station. In addition, the Cleveland National Forest Blue Jay Campground is located to the north of Phase 1 (south parcel). However, this campground area is located at a lower elevation than the project site and there are no views available of the project site from this campground. Views of the project site can also be seen from vehicles traveling along Long Canyon Road.

Ortega Highway (SR-74) is identified by the California Scenic Highway Mapping System (Caltrans, 2016) as an Eligible State Scenic Highway – not officially designated. Ortega Highway lies diagonally east of the project site (between 2,240 and 2,970 feet east of the project area) and provides regional access to Long Canyon Road, which is the route to the entrance of the project area. **Figures 3.1-1** and **3.1-2** provide representative views of the project area from Ortega Highway.

Ortega Highway provides access to the scenic ridge tops in the Santa Ana Mountains and is designated as a viewscape corridor by the Orange County General Plan, which is the more protective of two General Plan designations that are assigned to areas surrounding State Scenic Highways as described in Section 3.1.2, “Regulatory Setting,” below. Specifically, a viewscape corridor highway is one that traverses a corridor in which unique or unusual scenic resources and aesthetic vistas are found. Additionally, the Orange County General Plan states that special care must be paid to avoid damaging the scenic resources within a viewscape corridor. Furthermore, the General Plan Resources Element states that the foothills abutting the Cleveland National Forest boundary (which is the location of the proposed project) possess outstanding scenic qualities.

Figure 3.1-1. View Looking Northwest Toward the Project Site from Ortega Highway

Figure 3.1-2. View Looking Southeast Toward the Project Site from Ortega Highway

SOURCE: Hunsaker & Associates, 2014

The Preserve at San Juan

Figures 3.1-1 and 3.1-2
Views of the Project Site
from Ortega Highway

Light and Glare

Currently, the project site generates a very minimal amount of light and glare as it is largely undeveloped and/or unoccupied. The nighttime lighting environment consists of residential lighting from one occupied residence in the southwest corner of the Phase 2 parcel, one occupied residence in the southwest corner of the parcel, vehicle headlights along Long Canyon Road and Ortega Highway, and scattered lighting from rural residential uses near the project site and in El Cariso Village, which is approximately 1,500 feet east of the Phase 2 (north parcel).

Regulatory Setting

State Scenic Highway Program

The State Scenic Highway Program, created by the California Legislature in 1963, was established to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. A highway is designated under this program when a local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a scenic highway. When a city or county nominates an eligible scenic highway for official designation, it defines the scenic corridor, which is land generally adjacent to and visible to a motorist on the highway. As described above, Ortega Highway is an Eligible State Scenic Highway – not officially designated (Caltrans, 2016). Ortega Highway lies diagonally east of the project site (between 2,240 and 2,970 feet east of the project area) and provides regional access to Long Canyon Road, which provides access the project driveways.

County of Orange General Plan

Land Use Element

The Land Use Element of the Orange County General Plan, last updated in 2015, contains the following policy that is relevant to the proposed project:

Policy 9: Enhancement of Environment – To guide development so that the quality of the physical environment is enhanced.

Resources Element Open Space Component

The Open Space Component of the Resources Element provides preservation measures to assure scenic views. The Component identifies the Cleveland National Forest as unique, as there are few counties that possess national forests located near urban areas. Additionally, the component sets forth that maintaining a buffer between Cleveland National Forest. Specifically, the following goal, objective, and policy are relevant to the proposed project:

> **Goal 1:** Retain the character and natural beauty of the environment through the preservation, conservation, and maintenance of open space.
>
> **Objective 1.1:** To designate open space areas that preserve, conserve, maintain, and enhance the significant natural resources and physical features of unincorporated Orange County.
>
> **Policy 1.1:** To guide and regulate development of the unincorporated areas of the County to ensure that the character and natural beauty of Orange County is retained.

Transportation Element Scenic Highways Plan Component

The Scenic Highways Plan Component of the General Plan identifies the County's scenic highway routes, and designates Ortega Highway as a viewscape corridor, the more protective of two definitions assigned to areas surrounding State Scenic Highways, and consist of a route that traverses a corridor that contains unique or unusual scenic resources and aesthetic values. This designation is provided to minimize the impact of the highway and land development upon the significant scenic resources along the route. Transportation Element goal, objectives, and policy that is relevant to the proposed project are listed below.

Goal 1: Preserve and enhance unique or special aesthetic and visual resources through sensitive highway design and the regulation of development within the scenic corridor.

Objective 1.1: Protect and enhance the County's beauty, amenities and quality of life within the unincorporated areas.

Objective 1.2: Add to the pleasure of its residents and visitors by enhancing scenic routes.

Objective 1.4: Preserve established Scenic Highways in order to protect the existing scenic qualities of these corridors.

Objective 1.5: Develop the roadway portion of the scenic corridors in a manner that recognizes the natural scenic resources of the corridor and is sensitive to them to the maximum extent feasible.

Objective 1.6: Require sufficient setback from the scenic corridor, where feasible, for the purpose of preserving the corridor's scenic qualities.

3.1.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to aesthetics, a project could have a significant effect on the environment if it would:

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

As described in Chapter 1.0, *Introduction,* Notice of Preparations and Initial Studies were prepared and circulated for public review in both 2013 and 2014; the following comments related to aesthetics topics were received:

- Describe the background of the concept for the proposed project, and how will it fit into the existing views in the project area.

- Describe potential impacts Existing views of wild animals.
- Describe potential impacts related to light pollution.

3.1.3 Methodology

The significance determination for the visual analysis is based on consideration of the following: (1) the extent of change related to project visibility from key public vantage points; (2) the degree of visual contrast and compatibility in scale and character between project elements and the existing surroundings; and (3) project conformance with public policies regarding visual and urban design quality. The impact analysis presented below utilizes visual simulations prepared by Hunsaker & Associates that demonstrate the build-out conditions of the proposed project from key public vantage points. The viewpoint locations are identified in **Figure 3.1-3**.

In addition, nighttime lighting impacts would be significant if they would interfere with or intrude into sensitive land uses, which include wildlife, private residences, and public access areas, or if they impacted views in the area. Glare impacts would be significant if they result in daytime interferences with activities at sensitive land use areas as well as public roadways where drivers can be temporarily blinded by glare, thus causing a safety concern.

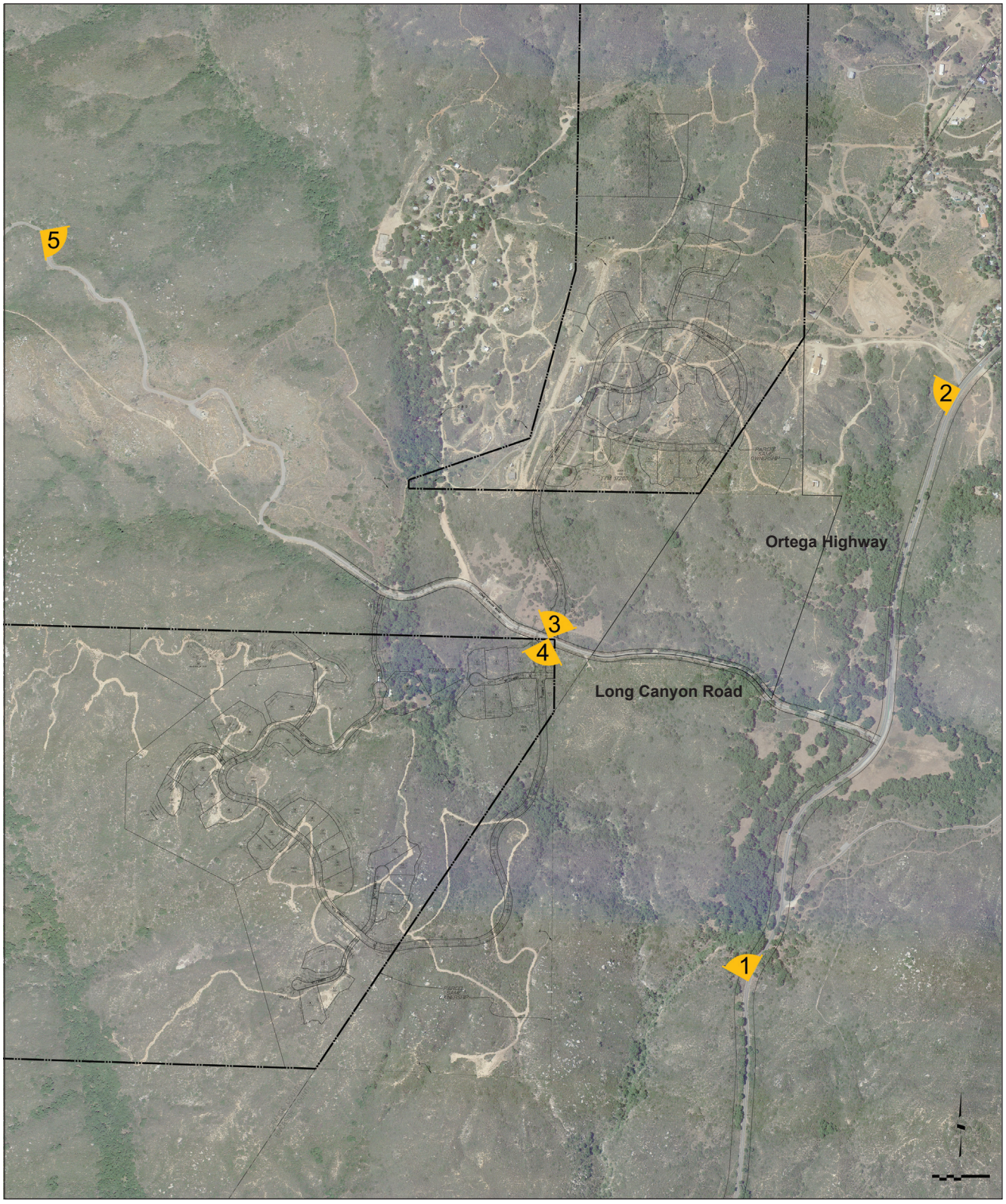
3.1.4 Project Impacts

Impact 3.1-1: Would implementation of the proposed project have a substantial adverse effect on a scenic vista?

Significant and Unavoidable Impact. Scenic vistas in the vicinity of the project site include the views of the generally undeveloped natural setting, ridgelines, hillsides, chaparral, woodlands, rock outcroppings and other features of the surrounding Santa Ana Mountains, which are visible throughout the project area, including from travelers along Ortega Highway, which is an Eligible State Scenic Highway and designated as a Viewscape Corridor by Orange County.

The proposed project would result in a change to scenic vistas from Ortega Highway by altering undeveloped rural land that contains natural visual resources such as topographical changes and various natural vegetation to residential uses and associated structures and landscaping that would be visible within, and thus have a substantial effect on, scenic vistas. Visual simulations of the proposed project from Ortega Highway are provided in **Figures 3.1-4** and **3.1-5,** and are described below.

Viewpoint 1: As shown in **Figure 3.1-4**, with development of the proposed project, views of residential uses in Phase I from Ortega Highway would be very limited and distant. However, Phase 2 (north parcel) would be visible as part of mid-range views to northbound travelers along Ortega Highway at a distance of approximately 0.35 mile south of Long Canyon Road. Undeveloped open space would consist of foreground views; however, some of the residences and rooflines within Phase 2 (north parcel) would be visible against the backdrop of the hills and ridgelines of the Santa Ana Mountains. The degree of visual contrast between the project elements and the existing surrounding area would be limited given obstruction of views by existing vegetation and topography, and that project landscaping seen from this distance (the



SOURCE: Hunsaker & Associates, 2014

The Preserve at San Juan

Figure 3.1-3
Viewpoint Locations Map

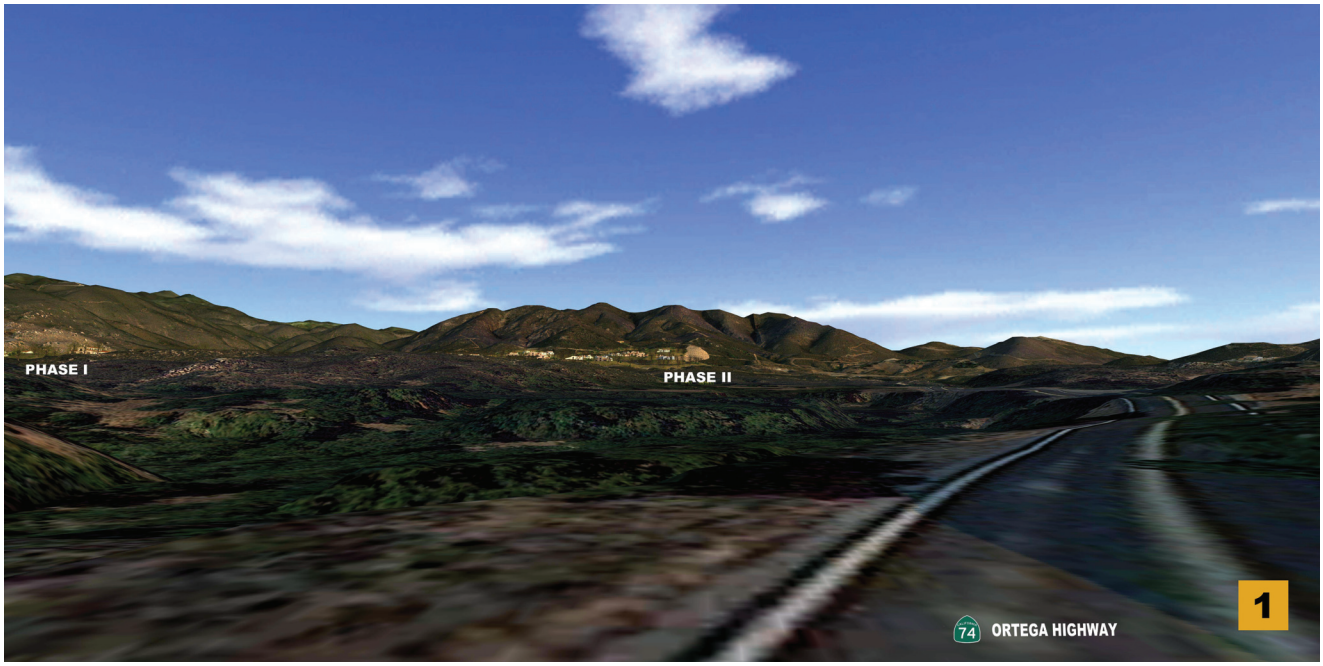


Figure 3.1-4. Viewpoint 1: Ortega Highway Looking Northwest

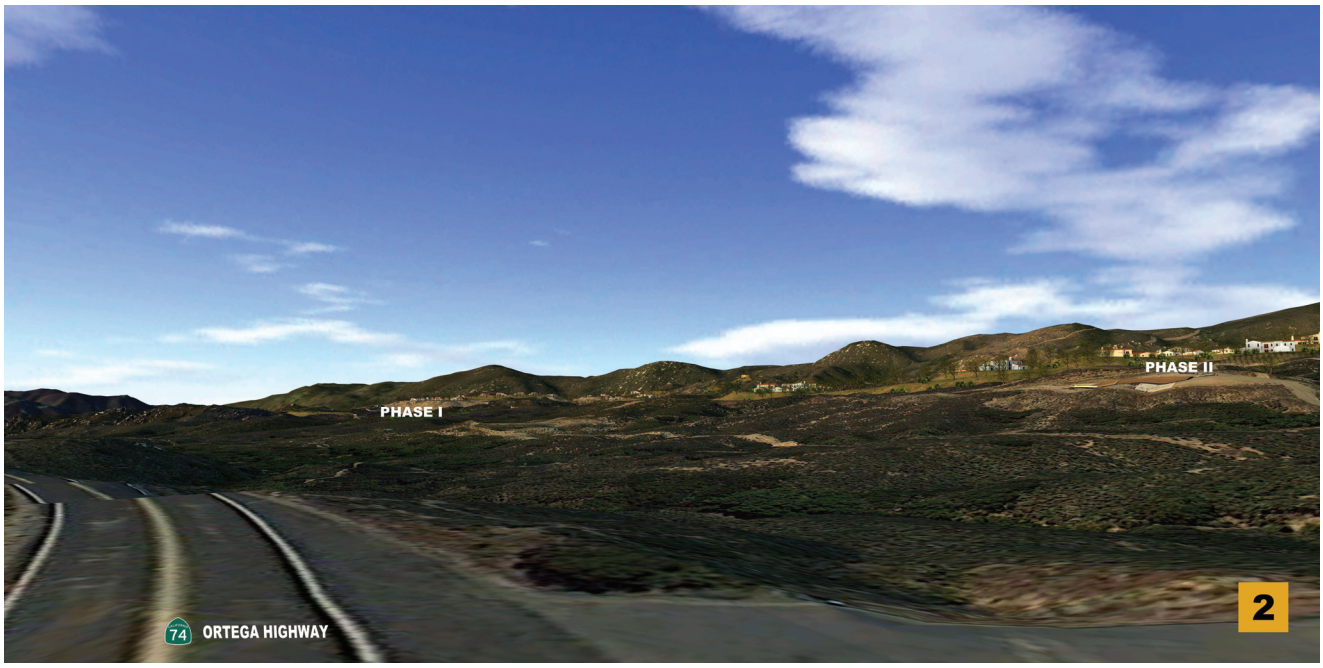


Figure 3.1-5. Viewpoint 2: Ortega Highway Looking Southeast

SOURCE: Hunsaker & Associates, 2014

The Preserve at San Juan
Figures 3.1-4 and 3.1-5
Viewpoints 1 and 2

trees) would blend into the surrounding area, especially because it includes installation of native oak trees. The major features contributing to the aesthetic value of this scenic vista, including the Santa Ana Mountain ridgeline and rock outcroppings in the background, and rolling hills and natural vegetation in the foreground, would continue to be visually prominent; and the proposed structures would consist of a limited portion of the view, which would be set back at a distance and would largely blend into the existing view. However, the addition of a clustered group of residential structures in the vast open space natural scenic vista would be inconsistent with the existing view, and because Ortega Highway is an Eligible State Scenic Highway and is designated as a viewscape corridor and the project would affect views of the unique scenic resources and aesthetic vistas in the Santa Ana Mountains, which are considered by the General Plan Resources Element to possess outstanding scenic qualities. Thus, the project would result in a significant impact on the scenic vista from Viewpoint 1.

- **Viewpoint 2:** As shown in **Figure 3.1-5**, with the development of the proposed project, mid-range views of residential uses within Phase 2 (north parcel) and long-range views of residential uses within Phase 1 (south parcel) would be visible to southbound travelers along Ortega Highway at a distance approximately 0.5 mile north of Long Canyon Road. The degree of visual contrast between the project elements and surrounding area would be substantial as several residences within Phase 2 (north parcel) would be visible and new landscaping would be introduced to an area that contains open space views of native vegetation and topography. Because these residences would fall in the middle ground, they would not obscure prominent features contributing to scenic vistas in the area, including the ridgelines of the Santa Ana Mountains. Residential uses constructed within Phase 1 (south parcel) would be marginally visible in long-range views and the visual contrast between Phase 1 (south parcel) and the existing surrounding area would be low as most of the structures associated with Phase 1 (south parcel) development would blend with the surrounding landscape. However, the addition of a clustered group of residential structures in the vast open space natural scenic vista, particularly the Phase 2 structures as shown in **Figure 3.1-5**, would be inconsistent with the existing undeveloped view of hillsides, ridgelines, and native vegetation; and because Ortega Highway is an Eligible State Scenic Highway and is designated as a viewscape corridor by Orange County and the project would affect views the unique scenic resources and aesthetic vistas in the Santa Ana Mountains, which are considered by General Plan Resources Element to possess outstanding scenic qualities, the project would result in a significant impact on the scenic vista from Viewpoint 2.

Overall, scenic vistas available from Ortega Highway (Viewpoints 1 and 2) would be impacted by the proposed project, although the project would be set back from the roadway, existing vegetation and topography would obstruct views of the project, and implementation of the following Project Design Features would reduce the impacts to scenic vistas:

- The provision of 414.6 acres or approximately 71 percent of the project site would preserve large areas of scenic vistas onsite, which are adjacent to the vistas within the Cleveland National Forest (PDF-1).

- Open space would be concentrated in the western and northern portions of the project site and the single-family residences would be clustered toward Long Canyon Road to create a buffer between the residential uses and the Cleveland National Forest lands, which would reduce impacts to scenic vistas by preservation of large areas of vistas (PDF-2).
- The project design will maintain similar topographic characteristics as the existing condition (PDF-3).
- Conceptual landscape plan has been designed to preserve open space areas, implement and oak tree planting plan, and provide landscaping that would screen views of the residential buildings and help them blend into the native vegetation surrounding the project site (PDF-4 and PDF-5).

However, after implementation of the Project Design Features, the proposed project would continue to result in a significant impact to scenic vistas that are available from portions of Ortega Highway, which is an Eligible State Scenic Highway and is designated as a viewscape corridor by Orange County. The project would affect views of the unique scenic resources and aesthetic vistas in the Santa Ana Mountains that are considered to possess outstanding scenic qualities by the General Plan Resources Element. The proposed project would permanently alter the existing views from a largely undisturbed natural setting to a residential development. Therefore, Mitigation Measure MM 3.1-1 has been included to require the use of earthen tones for exterior paint on the project's structures to further blend in with the natural environment and reduce impacts to scenic vistas. However, even with implementation of the Project Design Features and Mitigation Measure MM 3.1-1, the proposed project would continue to result in impacts to viewpoints from Ortega Highway, and as a result, impacts related to scenic vistas would be significant and unavoidable.

Mitigation Measure

MM 3.1-1 The project's design plans shall state that exterior paint colors for the residential and associated structures are limited to a palette of earthy tones that shall be provided for homeowners to choose from to ensure that project structures blend into the natural surroundings. Exterior paint options shall be included in the CR&Rs; and managed, approved, and enforced by the Homeowner's Association.

Impact 3.1-2: Would implementation of the proposed project 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 within a state scenic highway. Ortega Highway is an Eligible State Scenic Highway– not officially designated (Caltrans, 2016), and as described above the proposed project would be partially visible from Ortega Highway from to Viewpoints 1 and 2 to both northbound and southbound travelers; however, because Ortega Highway is not a designated state scenic highway, and no other state scenic highways are in the region of the

project site, impacts related to damage scenic resources within a state scenic highway would not occur.

Impact 3.1-3: Would implementation of the proposed project substantially degrade the existing visual character or quality of the site and its surroundings?

Significant and Unavoidable Impact. The proposed project would result in a change in the visual character of the project site and vicinity by altering undeveloped rural land that contains natural visual resources such as topographical changes and various natural vegetation to residential uses and associated structures, landscaping, fencing, roadways, and parking areas.

- **Viewpoints 1 and 2:** As described above and shown in **Figures 3.1-4 and 3.1-5**, residential uses in Phase 2 (north parcel) would be visible as part of mid-range views to northbound travelers along Ortega Highway against the backdrop of the hills and ridgelines of the Santa Ana Mountains. Although the proposed structures would consist of a limited portion of the view, which would be set back at a distance and would largely blend into the existing Santa Ana Mountain backdrop, the clustered group of residential structures in the vast open space natural scenic vista would be inconsistent with the existing visual character or quality of the site and its surroundings. The degree of visual contrast between the clustered residences and surrounding views of native vegetation and topography would be substantial. Thus, the character of the existing undeveloped, rural, open space area would be modified in a manner that is inconsistent with the existing rural character of views from Ortega Highway.
- **Viewpoint 3:** As shown in **Figure 3.1-6**, with the development of the proposed project, views of the residential uses, roadways, and landscaping associated with Phase 2 (north parcel) would be clearly visible looking north along Long Canyon Road. The degree of visual contrast between the project elements and the surrounding area would be substantial, as entire houses and associated roadways and landscaping would be featured prominently in foreground views and would be introduced in an area that is currently largely undisturbed. From this viewpoint, the proposed project would be incompatible with the character of the existing views, which consist of rural, undeveloped, open space, and native vegetation.

  Viewpoint 4: As shown in **Figure 3.1-7**, with the development of the proposed project, views of the residential uses, roadways, and landscaping associated with Phase 1 (south parcel) would be clearly visible from Long Canyon Road. The degree of visual contrast between the project elements and the surrounding area would be substantial as entire structures and new roadways would be featured prominently in foreground views in an area that is rural, largely undisturbed, and provides vast views of native vegetation and open space. Thus, the proposed project would be incompatible with the character of the existing views, which consist of rural, undeveloped, open space, and native vegetation.

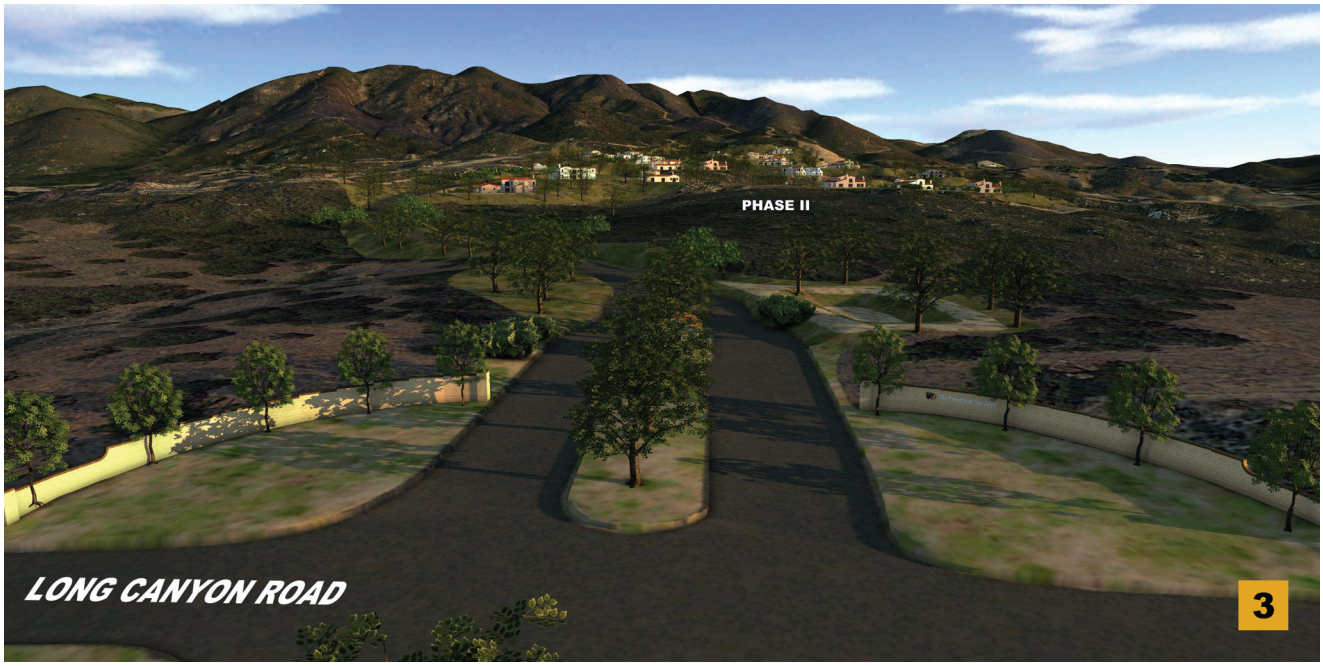


Figure 3.1-6. Viewpoint 3: Long Canyon Road at Project Entrance, Looking North

Figure 3.1-7. Viewpoint 4: Long Canyon Road at Project Entrance, Looking South

SOURCE: Hunsaker & Associates, 2014

The Preserve at San Juan
Figures 3.1-6 and 3.1-7
Viewpoints 3 and 4

- **Viewpoint 5**: As shown in **Figure 3.1-8,** with the development of the proposed project, views of the proposed residential uses would be visible from Long Canyon Road approximately 0.5 mile to the west of the project site at a location with a higher elevation than the project site, near the USFS El Cariso Hotshot Camp. The degree of visual contrast between the project elements and the surrounding open space, undeveloped area that contains hillsides and ridgetops would be substantial. Thus, the project would be incompatible with the character of the existing views, which consist of rural, undeveloped open space and native vegetation.

Overall, the proposed project would represent a substantial change to the existing visual character of the project area due to the addition of residential uses in an undeveloped open space area that contains various topographical features and native vegetation. However, the project includes several Project Design Features that are provided to minimize the visual contrast between the proposed project and the surrounding natural environment. In addition to Project Design Features PDF-1 through PDF-5 listed previously under Impact 3.1-1, above, Project Design Features PDF-6, PDF-9, and PDF-19, as listed below would also be implemented:

- Interior private streets have been designed to rural street standards (PDF-6).
- The project circulation is designed to be consistent with the County's Viewscape Typical Section including: an enlarged parkway, a hiking trail, and a lack of curbs (PDF-9).
- The water storage tanks will be visually screened with native/drought-tolerant landscaping and will be painted a neutral tone to blend with the surrounding environment (PDF-19).

In addition, Mitigation Measure MM 3.1-1 would require the use of earthen tones for exterior paint to blend in with the natural environment and reduce impacts to the visual character of the surrounding area. However, due to the substantial change to the existing visual character that would occur from implementation of the proposed project in the rural open space area of native vegetation, a significant and unavoidable impact related to the existing visual character of the project area and its surroundings would occur.

Mitigation Measure

MM 3.1-1 *(Provided previously under Impact 3.1-1)*

Impact 3.1-4: Would implementation of the proposed project 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 Implementation of Mitigation. The proposed project would result in new sources of daytime glare from cars and nighttime light associated with street lighting, vehicles, and interior and exterior residential lighting.

The proposed project would not introduce a substantial source of glare to the project site that would affect views in the area because the project would construct 72 homes using typical

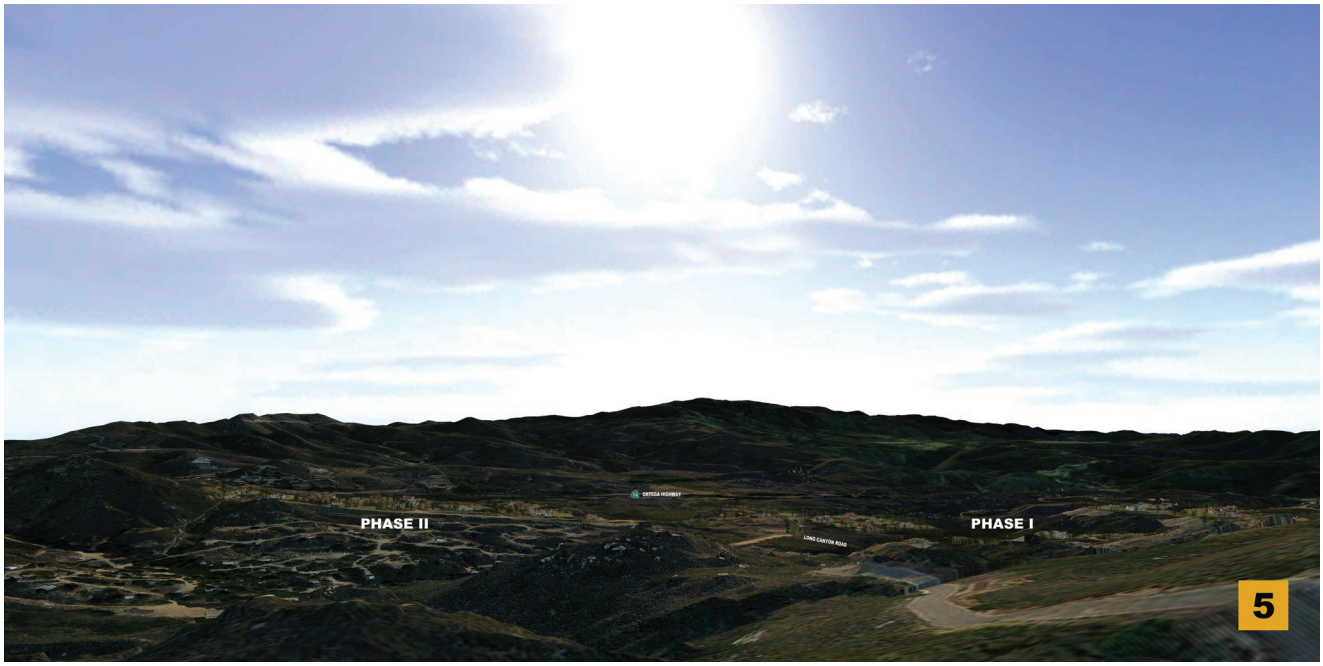


Figure 3.1-8. Viewpoint 5: USFS El Cariso Hotshot Camp, Looking East

SOURCE: Hunsaker & Associates, 2014

The Preserve at San Juan

Figure 3.1-8
Viewpoint 5

building materials (i.e., stucco siding, clay tile roofs, etc.), which would not create substantial daytime glare. Sources of daytime glare would include cars within the project site; however, the project does not include a substantial number of cars, or a central parking location that could create a substantial source of glare. Thus, impacts related to glare would be less than significant.

New sources of nighttime lighting would include indoor and outdoor lighting at the residential units as well as street lights associated with the interior roadway network for the residential development. The overall effect would be an increase in ambient light within the project site; however, residential lighting spilling out of the project area would be limited by the existing and proposed vegetation and natural topography of the area. The trees and hills and valleys would shield residential lights, such that an adverse impact relating to these lights would not occur.

In addition, new onsite roadway lighting would be shielded downward onto roadways and away from sensitive uses in conformance with County lighting standards. The County's approval process for the proposed project (implemented through Mitigation Measure MM 3.1-2) includes review of the project's specific lighting plans, which would ensure that the proposed lights would meet County standards while not generating a substantial source of light that would adversely affect nighttime views in the area. Furthermore, incorporation of Project Design Feature PDF-20, which includes BMPs related to minimizing ambient light from the project, would reduce potential impacts related to light. Therefore, with implementation of the Project Design Feature PDF-20 and Mitigation Measure MM 3.1-2, which requires lighting to be designed to meet the standards of the County, impacts related to lighting would be less than significant.

Mitigation Measure

MM 3.1-2 Prior to the issuance of building permits, the applicant shall demonstrate that all exterior lighting has been designed and located so that all direct rays are confined to the development areas of the project site in a manner meeting the approval of the County's Building and Safety Department.

3.1.5 Cumulative Impacts

The proposed project would represent a substantial change in the visual character of the project site and vicinity by altering undeveloped land to residential community uses. The project site is located in a rural and relatively remote area of Orange County, adjacent to the Cleveland National Forest. The geographic area within which cumulative effects to aesthetic resources could occur is the viewshed surrounding the project site, as only those projects that can be viewed in the context of the proposed project could contribute to cumulative visual effects.

There are no proposed or existing other projects within the viewshed of the proposed project. The nearest project listed on Table 3-1 of Chapter 3, is approximately 2.4 miles away from the project site in the City of Lake Elsinore and does not fall within the project's viewshed. Thus, the project area is too distant to potentially combine with visual impacts from cumulative projects. Likewise, the proposed project would not contribute to any cumulative increase in ambient nighttime lighting conditions or daytime glare due to its distance from other projects. Therefore, the

proposed project would not result in a cumulatively considerable impact related to aesthetic resources, and cumulative impacts would be less than significant.

3.2 Agriculture and Forest Resources

This section identifies and evaluates issues related to agriculture and forest resources in the context of the proposed project. It includes a description of existing land use conditions in relation to agriculture and forestry resources and an evaluation of potential impacts associated with implementation of the proposed project. Cumulative impacts are determined with consideration of projected development in the area.

3.2.1 Environmental Setting

Existing Conditions

Agricultural Setting

The project site and surrounding vicinity is primarily undeveloped, vacant land. The project site has an Orange County General Plan Land Use designation as Open Space (5), and is currently zoned as General Agriculture (A1). Although the project site is zoned as General Agriculture (A1), no agricultural uses or resources exist on or adjacent to the project site. California Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP) monitors the quantity and quality of farmland in the state and produces maps and statistical data on agricultural resources. The project site is not located in an area classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) by the FMMP (DOC, 2013).

The California Land Conservation Act of 1965 (commonly referred to as the Williamson Act) serves to preserve open spaces and agricultural land. It discourages urban sprawl and prevents landowners from developing their property for the greater land value of commercial and/or residential uses. The project site does not contain or adjacent to any lands that are subject to Williamson Act contracts, either active or in nonrenewal. The nearest land parcel under active Williamson Act contracts is located 5.9 miles northwest of the project site (APN 290-160-014).

Forest Setting

The project site is located on private land that is adjacent to areas within the southeastern portion of Cleveland National Forest, within the Santa Ana Mountains. Cleveland National Forest is a part of the national system of forest reservations, under the jurisdiction of U. S. Forest Service (USFS) and consists of 460,000 acres, mostly of chaparral, with a few riparian areas.

Timber production is historically scarce in Southern California, where the mountain vegetation is primarily brush with little timber (Sakarias, 1975). However, oak woodlands cover about 23,000 acres of the Cleveland National Forest. Several types of oak woodland are found on the forest; dominant species include coast live oak, black oak, and Engelmann oak (GORP, 2010).

The forest is divided into three Ranger Districts for administrative purposes: the Descanso District, occupying a large part of the San Diego County mountain area south of Palomar Mountain and north of the Mexican border; the Palomar District, consisting of Palomar Mountain and adjacent areas; and the Trabuco Ranger District, encompassing the Santa Ana Mountains, northeast of San Juan Capistrano in Orange, Riverside, and San Diego Counties. The project site

is located within the Trabuco Ranger District. Existing activity in the Trabuco Ranger District includes primarily hiking, biking, and horseback riding.

The forest is divided into a series of geographical units that are referred to as "places." There are 11 places identified for the Cleveland National Forest: Aguanga, Elsinore, Laguna, Morena, Palomar, Pine Creek, San Dieguito/Black Mountain, San Mateo, Silverado, Sweetwater, and Upper San Diego River. The project site is also located within Elsinore Place (46,729 acres), as defined in the Cleveland National Forest Land Management Plan (USFS, 2005). This includes the east-facing slopes of the Santa Ana Mountains, and is almost entirely surrounded by urban development. Elsinore Place contains 497 acres of San Mateo Wilderness (existing wilderness) and 11 acres of Chiquito Basin (special interest area). The project site is not located within any special designated areas of existing wilderness or within any special interest areas.

The project site is not zoned as forest land (as defined by Public Resources Code Section 1220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Public Resources Code Section 51104 (g)). None of the lands within or adjacent to the project site are used for timber harvesting.

Regulatory Setting

Public Resources Code

The California Public Resource Code defines Forest Land, Timber Land, and Timber Land Production Zones as follows:

> ***Forest Land (12220 G):*** Land that can support 10-percent native tree cover of any species, including: hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.
>
> ***Timber Land (4526):*** Land, other than land owned by the Federal government and land designated by the Board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the Board on a District basis after consultation with the District committees and others.
>
> ***Timber Land Production Zone (51104 G):*** Timber Land Production Zone (TPZ) are areas which have been zoned and is devoted to and uses for growing and harvesting timber, or for growing and harvesting timber and compatible uses.

Orange County General Plan Resources Element Natural Resources Component

The Orange County General Plan Resources Element Natural Resources Component contains the following goals and objectives that are relevant to the proposed project:

> **Goal 1:** Protect wildlife and vegetation resources and promote development that preserves these resources.

Objective 1.1: To prevent the elimination of significant wildlife and vegetation through resource inventory and management strategies.

Goal 3: Manage and utilize wisely the County's landform resources.

Objective 3.1: To minimize to the extent feasible the disruption of significant natural landforms in Orange County.

3.2.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to agricultural and forest resources, a project could have a significant effect on the environment if it would:

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

Potential impacts to agricultural resources were examined in the Notice of Preparations/Initial Studies (see Appendices A1 and A2 of this EIR). It was determined that the proposed project would not 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 (FMMP) of the California Resources Agency, to non-agricultural use. The Initial Study also determined that the proposed project would not conflict with existing zoning, 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)). Additionally, the proposed project would not 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 forest land to non-forest use. Therefore, no additional analysis of these significance criteria is addressed in this EIR.

3.2.3 Methodology

No existing land used for agricultural purposes is located onsite or in the vicinity of the project. The agricultural and forest resource impact analysis is based upon on zoning in and around the project site, and relevant federal, state, and local regulations. Potential impacts to forestry resources are based on information from the USFS, comparing existing settings and uses and those uses anticipated from the proposed project and the potential loss of forest land or conversion of forest land to non-forest use.

3.2.4 Project Impacts

Construction and operation of the proposed project would result in physical changes to the project area. Potential impacts related to agriculture and forestry resources are described below.

Impact 3.2-1: Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project site is zoned General Agricultural (A1), which allows residential development at a maximum density of 0.25 dwelling unit per acre (or four acres per dwelling unit), and other low intensity uses that have a primarily open space character. There are no existing agricultural uses on the site or in the project vicinity. In addition, the project site also does not contain any lands that are subject to Williamson Act contracts, either active or in nonrenewal.

The project proposes to rezone land from General Agriculture (A1) to Agricultural Residential (AR) zoning. Section 7-9-59.1 of the County's Zoning Code states that the AR zone is to provide for single-family residential neighborhoods in conjunction with agricultural and outdoor recreational uses. Consistent with the proposed zoning, the project would provide agricultural resources, in the form of vineyards, as part of the fuel modification and landscaping features. Grapes grown onsite would be maintained, harvested, and sold by the project's Homeowner's Association (HOA), which is consistent with the intent of both the existing and proposed agricultural zoning classification. Overall, the project would provide agricultural production to an area where none currently exists. Therefore, the project would not conflict with agricultural zoning and impacts related to agriculture would not occur.

Impact 3.2-2: Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The project site is not zoned as forest land (as defined by Public Resources Code Section 1220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Public Resources Code Section 51104 (g)). None of the lands within the project site are used for timber harvesting. However, a parcel that is part of the Cleveland National Forest separates Phase 1 (south parcel) and Phase 2 (north parcel). In addition, Cleveland National Forest lands are located to the north of Phase 2 (north parcel), to the south of Phase 1(south parcel), and to the west of both Phase 1 (south parcel) and Phase 2 (north parcel).

The proposed project would not provide any improvements or construction to any lands within the Cleveland National Forest. All of the project improvements would be located on private lands, or within a public right-of-way, such as the Ortega Highway and Long Canyon Road rights-of-way. The proposed project would cluster development (Project Design Feature PDF-2) and concentrate open space on the western and northern portions of the project site to create a buffer between the proposed residential uses and the existing Cleveland National Forest lands. In addition, as included by Project Design Feature PDF-20, best management practices would be incorporated into the project to ensure that indirect impacts (i.e., edge effects) are avoided or minimized to the maximum extent possible. Lighting would be pointed away from offsite areas and ambient light levels would be minimized to the maximum extent practicable, which would reduce edge effects related to the proposed residential development. Furthermore, as included by Project Design Feature PDF-1, open space accounts for 414.6 acres or approximately 71 percent of the project site, which would be offered for dedication to the U.S. Forest Service. With the dedication of this 414.6 acres that is currently private land, the existing forestland in the project

area would be increased, which is a benefit of the proposed project. Thus, the proposed project would not result in the loss or conversion of forest land to non-forest use; conversely the project would provide for additional U.S. Forest Land. As a result, impacts related to the loss or conversion of forest lands would not occur.

3.2.5 Cumulative Impacts

The geographic scope for cumulative agricultural and forest impacts is southern Orange County, including the Cities of Rancho Santa Margarita, Lake Elsinore, and the Mission Viejo. Overall, cumulative growth in population would likely decrease the amount of agricultural and forest land in southern Orange County. However, the proposed project area does not include any Important Farmland or other agricultural resources, and would not result in a cumulative contribution to the overall loss of farmland. Conversely, the project would implement the proposed Agricultural Residential (AR) zoning and provide agricultural resources, in the form of vineyards. Grapes grown onsite would be maintained, harvested, and sold by the project's HOA, which is consistent with the intent of the proposed agricultural zoning classification. Overall, the project would provide agricultural production to an area where none currently exists, and cumulatively considerable adverse impacts related to agricultural resources would not occur from implementation of the project.

The proposed project is located on private lands adjacent to parcels within the Cleveland National Forest, and no project improvements would be located within forestland, and the project has been designed to reduce the potential of edge effects related to the proposed residential development. Additionally, the project would offer 414.6 acres of land to the U.S. Forest service, which would increase the amount of forestland in the area. Thus, the project would increase forestland and cumulatively considerable adverse impacts related to forestland would not occur from implementation of the project.

3.3 Air Quality

This section provides an overview of the existing air quality at the project site and surrounding region, a summary of applicable regulations, and analyses of potential short-term and long-term air quality impacts from implementation of the proposed project. Mitigation measures are recommended as necessary to reduce significant air quality impacts.

3.3.1 Environmental Setting

Climate and Meteorology

The proposed project site consists of two non-contiguous sites, Phase 1 (south parcel) and Phase 2 (north parcel), that are located in the southeastern part of unincorporated Orange County. The project site is located within the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The Basin is a 6,600-square-mile coastal plain bounded by the Pacific Ocean to the southwest and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, and all of Orange County.

The ambient concentrations of air pollutants are determined by the amount of emissions released by sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources.

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The topography and climate of Southern California combine to make the Basin an area of high air pollution potential. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is disrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cool marine layer and inhibits the pollutants in the marine layer from dispersing upward. In addition, light winds during the summer further limit ventilation. Furthermore, sunlight triggers the photochemical reactions which produce ozone.

Criteria Air Pollutants

The California Air Resources Board (CARB) and the United States Environmental Protection Agency (USEPA) currently focus on the following air pollutants as indicators of ambient air quality: ozone, carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}), fine

particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. These pollutants are referred to as "criteria air pollutants" because they are the most prevalent air pollutants known to be injurious to human health. Extensive health-effects criteria documents regarding the effects of these pollutants on human health and welfare have been prepared over the years.1 Standards have been established for each criteria pollutant to meet specific public health and welfare criteria set forth in the federal Clean Air Act (CAA). California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (referred to as State Ambient Air Quality Standards, or state standards) and has adopted air quality standards for some pollutants for which there is no corresponding national standard, such as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

Ozone

Ozone, the main component of photochemical smog, is primarily a summer and fall pollution problem. Ozone is not emitted directly into the air, but is formed through a complex series of chemical reactions involving other compounds that are directly emitted. These directly emitted pollutants (also known as ozone precursors) include reactive organic gases (ROGs) or volatile organic compounds (VOCs), and oxides of nitrogen (NOx). While both ROGs and VOCs refer to compounds of carbon, ROG is a term used by CARB and is based on a list of exempted carbon compounds determined by CARB. VOC is a term used by USEPA and is based on their own exempt list. The time period required for ozone formation allows the reacting compounds to spread over a large area, producing regional pollution problems. Ozone concentrations are the cumulative result of regional development patterns rather than the result of a few significant emission sources.

Once ozone is formed, it remains in the atmosphere for one or two days. Ozone is then eliminated through reaction with chemicals on the leaves of plants, attachment to water droplets as they fall to earth ("rainout"), or absorption by water molecules in clouds that later fall to earth with rain ("washout").

Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. In addition to causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide

CO, a colorless and odorless gas, is a relatively non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicles. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements

1 Additional sources of information on the health effects of criteria pollutants can be found at CARB and USEPA's websites at http://www.arb.ca.gov/research/health/health.htm and http://www.epa.gov/air/airpollutants.html, respectively.

and modeling have not been a priority in most California air districts due to the retirement of older polluting vehicles, lower emissions from new vehicles, and improvements in fuels.

Nitrogen Dioxide

NO2 is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO2. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO2. The combined emissions of NO and NO2 are referred to as NOx, which are reported as equivalent NO2. Aside from its contribution to ozone formation, NO2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

Sulfur Dioxide

SO2 is a colorless, extremely irritating gas or liquid that enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal, and from chemical processes occurring at chemical plants and refineries. When SO2 oxidizes in the atmosphere, it forms sulfur trioxide (SO3). Collectively, these pollutants are referred to as sulfur oxides (SOx).

Major sources of SO2 include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of SO2 aggravate lung diseases, especially bronchitis. This compound also constricts the breathing passages, especially in people with asthma and people involved in moderate to heavy exercise. SO2 potentially causes wheezing, shortness of breath, and coughing. Long-term SO2 exposure has been associated with increased risk of mortality from respiratory or cardiovascular disease.

Particulate Matter

PM_{10} and $PM_{2.5}$ consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively (a micron is one-millionth of a meter). PM10 and PM2.5 represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis and respiratory illnesses in children. Particulate matter can also damage materials and reduce visibility. One common source of PM2.5 is diesel exhaust emissions.

PM_{10} consists of particulate matter emitted directly into the air (e.g., fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires, and natural windblown dust) and particulate matter formed in the atmosphere by condensation and/or transformation of SO2 and ROG. Traffic generates particulate matter emissions through entrainment of dust and dirt particles that settle onto roadways and parking lots. PM_{10} and $PM_{2.5}$ are also emitted by burning wood in residential wood stoves and fireplaces and open agricultural burning. $PM_{2.5}$ can also be formed through secondary processes such as airborne reactions with certain pollutant precursors, including ROGs, ammonia (NH3), NOx, and SOx.

Lead

Lead is a metal found naturally in the environment and present in some manufactured products. There are a variety of activities that can contribute to lead emissions, which are grouped into two general categories, stationary and mobile sources. On-road mobile sources include light-duty automobiles; light-, medium-, and heavy-duty trucks; and motorcycles.

Emissions of lead have dropped substantially over the past 40 years. The reduction before 1990 is largely due to the phase-out of lead as an anti-knock agent in gasoline for on-road automobiles. Substantial emission reductions have also been achieved due to enhanced controls in the metals processing industry. In the Basin, atmospheric lead is generated almost entirely by the combustion of leaded gasoline and contributes less than one percent of the material collected as total suspended particulates.

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

According to the California Almanac of Emissions and Air Quality (CARB, 2009), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines (diesel PM). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a particulate matter exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Odorous Emissions

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). Offensive odors are unpleasant and can lead to public distress generating citizen complaints to local governments. Although unpleasant, offensive odors rarely cause physical

harm. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source, wind speed, direction, and the sensitivity of receptors.

Project Area Setting

Existing Air Quality

SCAQMD maintains monitoring stations within district boundaries that monitor air quality and compliance with associated ambient standards. The project site is located within the Saddleback Valley and Lake Elsinore Air Monitoring Subregions. The nearest monitoring to the project site is the Lake Elsinore Monitoring Station (506 W. Flint Street in Lake Elsinore), which is located approximately six miles northeast of the project site. This station monitors the ambient concentrations of ozone, CO, NO_2. The station does not monitor PM_{10} and $PM_{2.5}$. Therefore, the PM_{10} and $PM_{2.5}$ data was obtained from the Saddleback Valley Monitoring Station, which is the next closest to the project site. Historical data from the Lake Elsinore Monitoring Station for ozone, CO, NO_2, and data from the Saddleback Valley Monitoring Station for PM_{10} and $PM_{2.5}$ for three years (2012 – 2014) are shown in **Table 3.3-1**.

Both CARB and USEPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Nonattainment is defined as any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the primary or secondary ambient air quality standard for the pollutant. Attainment is defined as any area that meets the primary or secondary ambient air quality standard for the pollutant. Unclassifiable is defined as any area that cannot be classified on the basis of available information as meeting or not meeting the primary or secondary ambient air quality standard for the pollutant. In addition, California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment.

As shown below in **Table 3.3-2**, the Basin is currently classified as both a federal and state nonattainment area for 1-hour and 8-hour ozone and annual PM2.5. It is also classified as a state nonattainment for PM10 for both 24-hour and annual standards. (CARB, 2016). In addition, while the Los Angeles County portion of the Basin is classified as a federal nonattainment area for lead due to air quality data measured near a large lead-acid battery recycling facility, the remainder of the Basin is classified as a federal unclassifiable/attainment area for lead. The Basin is a also a federal attainment/maintenance area for 24-hour PM10, NO2, both 1-hour and 8-hour for CO, and SO2 (SCAQMD, 2016).2

2 A maintenance area is an area that was designated nonattainment for one of the National Ambient Air Quality Standards (NAAQS), but later met the standard and was re-designated to attainment. To ensure the air quality in this area continues to meet the NAAQS, states are required to develop and implement Maintenance State Implementation Plans.

TABLE 3.3-1
AIR QUALITY DATA SUMMARY (2012 – 2014)

Pollutant	Standard[a]	Monitoring Data by Year		
		2012	2013	2014
Ozone				
Highest 1 Hour Average (ppm)		0.111	0.102	0.104
Days over State Standard	0.09 ppm	10	6	4
Highest 8 Hour Average (ppm)		0.090	0.089	0.086
Days over National Standard	0.075 ppm	17	12	6
Days over State Standard	0.070 ppm	32	25	14
Carbon Monoxide				
Highest 8 Hour Average (ppm)		0.52	0.6	1.4
Days over National Standard	9.0 ppm	0	0	0
Days over State Standard	9.0 ppm	0	0	0
Nitrogen Dioxide				
Highest 1 Hour Average (ppm)		0.048	0.047	0.045
Days over National Standard	0.100 ppm	0	0	0
Days over State Standard	0.18 ppm	0	0	0
Annual Average (ppm)		0.010	8.4	8.2
Days over National Standard	0.053 ppm	0	0	0
Days over State Standard	0.030 ppm	0	0	0
Particulate Matter (PM_{10})				
Highest 24 Hour Average ($\mu g/m^3$)[b]		37	51	41
Days over National Standard (measured)[c]	150 $\mu g/m^3$	0	0	0
Days over State Standard (measured)[c]	50 $\mu g/m^3$	0	1	0
Annual Average ($\mu g/m^3$)[b]	20 $\mu g/m^3$	17.3	19.3	20.2
Particulate Matter ($PM_{2.5}$)				
Highest 24 Hour Average ($\mu g/m^3$)[b]		27.6	28	25.5
Days over National Standard (measured)[c]	35 $\mu g/m^3$	0	0	0
Annual Average ($\mu g/m^3$)[b]	12 $\mu g/m^3$	7.91	8.08	8.02

Notes:
ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.
* = Insufficient data available to determine the value.

[a] Generally, state standards and national standards are not to be exceeded more than once per year.

[b] Concentrations and averages represent federal statistics. State and federal statistics may differ because of different sampling methods.

[c] Measurements are usually collected every six days. Days over the standard represent the measured number of days that the standard has been exceeded.

Source: CARB, 2014.

TABLE 3.3-2
SOUTH COAST AIR BASIN ATTAINMENT STATUS

Pollutant	Attainment Status	
	Federal Standards	State Standards
Pollutant	**Federal Standards**	**State Standards**
Ozone (1-hour)	Non-attainment/Extreme	Non-attainment
Ozone (8-hour)	Non-attainment/Extreme	Non-attainment
PM_{10}	Attainment/Maintenance	Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
Carbon Monoxide	Attainment/Maintenance	Attainment
Nitrogen Dioxide	Attainment/Maintenance	Attainment
Sulfur Dioxide	Attainment	Attainment
Sulfates	N/A	Attainment
Lead	Non-attainment	Non-attainment

Source: CARB, 2016

Sensitive Land Uses

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are considered to be more sensitive to poor air quality than the general public because the population groups associated with these uses have increased susceptibility to respiratory distress. In addition, residential uses are considered more sensitive to air quality conditions than commercial and industrial uses, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation.

Existing sensitive receptors in the vicinity of the project site consist of sparsely located rural single-family residential uses. The nearest single-family residences to Phase 1 (south parcel) are located approximately 1,340 feet away to the north, near Long Canyon Road. The nearest sensitive receptor to Phase 2 (north parcel) is a single-family residence located approximately 160 feet east of the southeastern portion of the site, followed by a residence located approximately 670 feet way.

In addition, low density rural single-family residential structures are located to the west of the Phase 2 (north parcel) boundary. The nearest structure located approximately 170 feet away. However, all of these residences to the west of Phase 2 (north parcel) are vacant.

There is currently one occupied residence located within the southwest corner of Phase 2 (north parcel); however, this residence would be vacated at the start of project construction.

Regulatory Setting

The project site is located within the South Coast Basin. Air quality in the project area is regulated by the USEPA, CARB, and SCAQMD. The County of Orange General Plan also contains a component in the Resources Element related to air quality.

United States Environmental Protection Agency

Criteria Air Pollutants

At the federal level, the United Stated Environmental Protection agency (USEPA) has been charged with implementing national air quality programs. USEPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The CAA requires USEPA to establish National Ambient Air Quality Standards (NAAQS). USEPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, CO, NO2, SO2, PM_{10}, $PM_{2.5}$, and lead. **Table 3.3-3** shows the NAAQS for these pollutants.

The CAA also requires each state to prepare an air quality control plan, referred to as a state implementation plan (SIP). The CAA Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. USEPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and to determine whether implementing the SIPs will achieve air quality goals. If USEPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary sources of air pollution in the air basin.

USEPA also has regulatory and enforcement jurisdiction over emission sources beyond state waters (outer continental shelf), and those that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking. USEPA's primary role at the state level is to oversee state air quality programs. USEPA sets federal vehicle and stationary source emissions standards and provides research and guidance in air pollution programs.

Hazardous Air Pollutants

USEPA has programs for identifying and regulating hazardous air pollutants (HAPs). Title III of the CAAA directed USEPA to promulgate national emissions standards for HAPs (NESHAP). The NESHAP may differ for major sources than for area sources of HAPs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (tpy) of any HAP or more than 25 tpy of any combination of HAPs; all other sources are considered area sources. The emissions standards are to be promulgated in two phases. In the first phase (1992–2000), USEPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring maximum achievable control technology (MACT). For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), USEPA promulgated health-risk-based emissions standards, where deemed necessary, to address risks remaining after implementation of the technology-based NESHAP standards.

TABLE 3.3-3
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour 8 hours	0.09 ppm 0.07 ppm	--- 0.075 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when ROG and NO_X react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
Carbon Monoxide (CO)	1 hour 8 hours	20 ppm 9.0 ppm	35 ppm 9 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
Nitrogen Dioxide (NO_2)	1 hour Annual Arithmetic Mean	0.18 ppm 0.030 ppm	0.100 ppm 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide (SO_2)	1 hour 3 hours 24 hours Annual Arithmetic Mean	0.25 ppm --- 0.04 ppm ---	75 ppb 0.50 ppm 0.14 ppm 0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Respirable Particulate Matter (PM10)	24 hours Annual Arithmetic Mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 ---	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
Fine Particulate Matter (PM2.5)	24 hours Annual Arithmetic Mean	--- 12 µg/m^3	35 µg/m^3 12 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO_X, sulfur oxides, and organics.
Lead (Pb)	30 Day Average Calendar Quarter Rolling 3-Month Average	1.5 µg/m^3 --- ---	--- 1.5 µg/m^3 0.15 µg/m^3	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases).	*Present source:* lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal power plants, petroleum production and refining
Sulfates (SO_4)	24 hour	25 µg/m^3	No National Standard	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio-pulmonary disease; vegetation damage; degradation of visibility; property damage.	Industrial processes.
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See $PM_{2.5}$.

Note: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter.
Source: CARB, 2013c.

The CAAA also required USEPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 required the use of reformulated gasoline in selected areas with the most severe ozone nonattainment conditions to further reduce mobile-source emissions.

California Air Resources Board

Criteria Air Pollutants

The California Air Resources Board (CARB), a department of the California Environmental Protection Agency, oversees air quality planning and control throughout California. CARB is responsible for coordination and oversight of state and local air pollution control programs in California and for implementation of the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, requires CARB to establish the California Ambient Air Quality Standards (CAAQS). CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. Applicable CAAQS are shown in **Table 3.3-2**.

The CCAA requires all local air districts in the state to endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts shall focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

Among CARB's other responsibilities are overseeing compliance by local air districts with California and federal laws; approving local air quality plans; submitting SIPs to USEPA; monitoring air quality; determining and updating area designations and maps; and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Toxic Air Contaminants

Air quality regulations also focus on toxic air contaminants (TACs). In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no safe level of exposure. This contrasts with the criteria air pollutants, for which acceptable levels of exposure can be determined and for which the ambient standards have been established. Instead, USEPA and CARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the MACT or best available control technology (BACT) for toxics and to limit emissions. These statutes and regulations, in conjunction with additional rules set forth by the districts, establish the regulatory framework for TACs.

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807 [Chapter 1047, Statutes of 1983]) and the Air Toxics Hot Spots Information and Assessment Act (Hot Spots Act) (AB 2588 [Chapter 1252, Statutes of 1987]). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted USEPA's list of HAPs as TACs.

Most recently, diesel PM was added to the CARB list of TACs. Once a TAC is identified, CARB then adopts an airborne toxics control measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions.

The Air Toxics Hot Spots Information and Assessment Act requires existing facilities emitting toxic substances above a specified level to prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

CARB published the Air Quality and Land Use Handbook: A Community Health Perspective (Handbook), which provides guidance concerning land use compatibility with TAC sources (CARB, 2005). Although it is not a law or adopted policy, the Handbook offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities, to help keep children and other sensitive populations out of harm's way. Based on CARB's Community Health Air Pollution Information System (CHAPIS), no major TAC sources are located in proximity to the project site.

SCAQMD

Criteria Air Pollutants

SCAQMD attains and maintains air quality conditions in the Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of SCAQMD includes preparation of plans for attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. SCAQMD also inspects stationary sources of air pollution and responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the CAA, CAAA, and CCAA. Air quality plans applicable to the proposed project are discussed below.

Air Quality Management Plan

SCAQMD and the Southern California Association of Governments (SCAG) are responsible for preparing the air quality management plan (AQMP), which addresses federal and state CAA requirements. The AQMP details goals, policies, and programs for improving air quality in the Basin.

The 2012 AQMP was adopted by the SCAQMD Governing Board on December 12, 2012. The purpose of the 2012 AQMP for the Basin is to set forth a comprehensive and integrated program that will lead the region into compliance with the federal 24-hour PM2.5 air quality standard, and to provide an update to the Basin's commitment towards meeting the federal 8-hour ozone standards (SCAQMD, 2013). The AQMP would also serve to satisfy recent USEPA requirements for a new attainment demonstration of the revoked 1-hour ozone standard, as well as a vehicle

miles travelled (VMT) emissions offset demonstration.3 Specifically, once approved by CARB, the AQMP would serve as the official SIP submittal for the federal 2006 24-hour PM2.5 standard, for which USEPA has established a due date of December 14, 2012. In addition, the AQMP updates specific new control measures and commitments for emissions reductions to implement the attainment strategy for the 8-hour ozone SIP. The 2012 AQMP sets forth programs which require integrated planning efforts and the cooperation of all levels of government: local, regional, state, and federal. SCAQMD staff has begun the development process for the 2016 AQMP.

SCAQMD Rules and Regulations

All projects are subject to SCAQMD rules and regulations. Specific rules applicable to the proposed project include the following:

Rule 401 – Visible Emissions. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any 1 hour that is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

Rule 402 – Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any such persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Rule 403 – Fugitive Dust. SCAQMD Rule 403 governs emissions of fugitive dust during and after construction. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires project applicants to control fugitive dust using the best available control measures such that dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a, offsite nuisance. Applicable Rule 403 dust suppression (and PM_{10} generation) techniques to reduce impacts on nearby sensitive receptors may include, but are not limited to, the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).

3 Although the federal 1-hour ozone standard was revoked in 2005, the USEPA has proposed to require a new 1-hour ozone attainment demonstration in the South Coast extreme ozone nonattainment area as a result of a recent court decision. Although USEPA has replaced the 1-hour ozone standard with a more health protective 8-hour standard, the CAA anti-backsliding provisions require that California have approved plans for attaining the 1-hour standard.

- Water active sites at least three times daily. Locations where grading is to occur shall be thoroughly watered prior to earthmoving.
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.
- Suspend all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Provide bumper strips or similar best management practices where vehicles enter and exit the construction site onto paved roads, or wash off trucks and any equipment leaving the site each trip.
- Replant disturbed areas as soon as practical.
- Sweep onsite streets (and offsite streets if silt is carried to adjacent public thoroughfares) to reduce the amount of particulate matter on public streets. All sweepers shall be compliant with SCAQMD Rule 1186.1, Less Polluting Sweepers.

Rule 445 – Wood Burning. This rule prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

Rule 481 – Spray Coating. This rule applies to all spray painting and spray coating operations and equipment and states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

- The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.
- Coatings are applied with high-volume low-pressure, electrostatic and/or airless spray equipment.
- An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

Rule 1108 - Volatile Organic Compounds. This rule governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the Basin. This rule also regulates the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

Rule 1110.2 – Combustion Engines. Rule 1110.2 regulates oxides of nitrogen (NOx), carbon monoxide (CO), and volatile organic compound (VOC) emissions from liquid and gas fueled internal combustion engines operating in the SCAQMD producing more than 50 rated brake horsepower (bhp).

Rule 1113 – Architectural Coatings. No person shall apply or solicit the application of any architectural coating within the SCAQMD with VOC content in excess of the values specified in a table incorporated in the Rule.

Rule 1143 – Paint Thinners and Solvents. This rule governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

Toxic Air Contaminants

At the local level, air pollution control or management districts may adopt and enforce CARB control measures. Under SCAQMD Regulation XIV (Toxics and Other Non-Criteria Pollutants), and in particular Rule 1401 (New Source Review), all sources that possess the potential to emit TACs are required to obtain permits from SCAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. SCAQMD limits emissions and public exposure to TACs through a number of programs. SCAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

The Air Toxics Control Plan (March 2000, revised March 26, 2004) is a planning document designed to examine the overall direction of SCAQMD's air toxics control program. It includes development and implementation of strategic initiatives to monitor and control air toxics emissions. Control strategies that are deemed viable and are within SCAQMD's jurisdiction will each be brought to the SCAQMD Board for further consideration through the normal public review process. Strategies that are to be implemented by other agencies will be developed in a cooperative effort, and the progress will be reported back to the Board periodically.

In September 2008 the SCAQMD completed the Multiple Air Toxics Exposure Study III (MATES III). MATES III is a monitoring and evaluation study conducted in the Basin and is a follow up to previous air toxics studies. The study consists of several elements including a monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the Basin. The study focuses on the carcinogenic risk from exposure to air toxics. However, it does not estimate mortality or other health effects from particulate exposures. MATES III shows that the region around the Specific Plan area has an estimated carcinogenic risk of 258 in a million. These model estimates were based on monitoring data collected at ten fixed sites within the Basin. As of June 2012, SCAQMD began conducting the MATES IV.

County of Orange General Plan Resources Element

The Resources Element of the Orange County General Plan contains the following goals, objectives, and policies that are relevant to the proposed project:

Goal 1: Promote optimum sustainable environmental quality standards for air resources.

Objective 1.1: To the extent feasible, attainment of federal and state air quality standards by the year 2007.

Policy 1: To develop and support programs which improve air quality or reduce air pollutant emissions.

3.3.2 Thresholds of Significance

According to Appendix G of the *CEQA Guidelines* and the County of Orange Environmental Analysis Checklist, a project could have a significant adverse effect on air quality resources if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- 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);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

It was determined in the NOPs/Initial Studies (see Appendices A1 and A2 of this EIR) that implementation of the proposed project would have a less than significant impact related to odors. Odors resulting from the temporary construction of the proposed project are not likely to affect a substantial number of people due to the fact that construction activities do not usually emit offensive odors, and the project is not located in a highly populated or visited area. Additionally, the project would only involve residential uses, which are not land uses that are typically associated with the generation of objectionable odors such as large commercial or industrial uses. Therefore, no further analysis of this significance criterion is included in the EIR.

The comments from the SCAQMD related to air quality were received in response to the NOPs/Initial Studies, which provided direction regarding air quality analysis methodology, mitigation measures, and data sources. As described below, SCAQMD methodologies and thresholds have been integrated into the air quality analysis for the proposed project.

Regional Thresholds: Orange County has not developed specific air quality thresholds for air quality impacts. However, as stated in Appendix G of the *CEQA Guidelines*, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. As such, the significance thresholds and analysis

methodologies in SCAQMD's *CEQA Air Quality Handbook* are used in evaluating project impacts. SCAQMD has established daily mass thresholds for regional pollutant emissions, which are shown in **Table 3.3-4**.

TABLE 3.3-4
SCAQMD REGIONAL AIR QUALITY SIGNIFICANCE THRESHOLDS

	Mass Daily Thresholds (lbs/day)	
Pollutant	**Construction**	**Operations**
Oxides of Nitrogen (NO_X)	100	55
Reactive Organic Gases (ROG)	75	55
Respirable Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55
Oxides of Sulfur (SO_X)	150	150
Carbon Monoxide (CO)	550	550
Lead[a]	3	3
TACs (including carcinogens and non-carcinogens: Maximum Incremental Cancer Risk : ≥ 10 in 1 million Cancer Burden: > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index: ≥ 1.0 (project increment)		

[a] As the proposed project would not involve the development of any major lead emissions sources, lead emissions would not be analyzed further in the EIR.
Source: SCAQMD, 2015.

Localized Significance Thresholds. SCAQMD has also developed localized significance thresholds (LSTs) that represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, and thus would not cause or contribute to localized air quality impacts. LSTs are developed based on the ambient concentrations of that pollutant for each of the 38 source receptor areas (SRAs) in the Basin. The localized thresholds, which are found in the mass rate look-up tables in the "Final Localized Significance Threshold Methodology" document prepared by SCAQMD, were developed for use on projects that are less than or equal to five acres in size and are only applicable to the following criteria pollutants: NOx, CO, PM_{10}, and $PM_{2.5}$.

Although the project site is greater than five acres, the applicable SCAQMD localized thresholds for a five-acre site from the "Final Localized Significance Threshold Methodology" document's mass rate look-up tables are used to first provide a conservative screening analysis of the project's construction emissions. This is conservative because it estimates emissions of the entire project area and concentrates them into a 5-scre site. Thereby, the evaluation analyzes a concentrated amount of emissions. The determination of significance is based on whether the peak daily construction emissions exceed the LSTs for a five-acre site. The LSTs for a five-acre site in SRA 25, which is the closest SRA to the project, are shown in **Table 3.3-5**.

TABLE 3.3-5
SCAQMD LOCALIZED SIGNIFICANCE THRESHOLDS

Pollutant Monitored Within SRA 25 – Lake Elsinore	5-Acre Site[a]				
	Allowable emissions (pounds/day) as a function of receptor distance (feet) from site boundary				
	82 (ft)	164 (ft)	328 (ft)	656 (ft)	1,640 (ft)
Construction Thresholds					
Nitrogen Oxides (NO_x)[b]	371	416	520	672	1,072
Carbon Monoxide (CO)	1,956	2,714	4,282	8,547	29,256
Respirable Particulate Matter (PM_{10})	13	40	57	96	207
Fine Particulate Matter ($PM_{2.5}$)	8	10	16	31	105

[a] Although the project site exceeds five acres, the LSTs for a five-acre site is used to provide an initial screening analysis of the proposed project's construction emissions. If the project's construction emissions would exceed the LSTs in this table, then further analysis using dispersion modeling, as recommended by the SCAQMD, would be performed to determine the magnitude of the project's localized air quality impacts on its surrounding off-site sensitive receptors. However, if the project's construction emissions would not exceed the LSTs in this table, then it can be concluded that the project would not result in adverse localized air quality impacts on its surrounding off-site sensitive receptors during construction.

[b] The localized thresholds listed for NOx in this table take into consideration the gradual conversion of NO to NO_2.The analysis of localized air quality impacts associated with NOx emissions focuses on NO_2 levels as they are associated with adverse health effects.

Source: SCAQMD, 2009.

3.3.3 Methodology

This analysis focuses on the nature and magnitude of the change in the air quality environment due to implementation of the proposed project. Air pollutant emissions associated with the proposed project would result from construction activities at the project site and on roadways resulting from construction-related traffic. Additionally, emissions would also be generated from operations of the future residential uses at the project site and from traffic volumes generated by these new uses. The net increase in emissions generated by these activities and other secondary sources have been quantitatively estimated and compared to the applicable thresholds of significance recommended by SCAQMD.

Construction Emissions

Short-term construction-generated emissions of criteria air pollutants and ozone precursors were assessed in accordance with methods recommended by SCAQMD. The proposed project's regional emissions were modeled using the California Emissions Estimator Model (CalEEMod), as recommended by SCAQMD, and inclusion of all required SCAQMD Rules, which are listed in Section 3.3-1. CalEEMod was used to determine whether short-term construction-related emissions of criteria air pollutants associated with the proposed project would exceed applicable regional thresholds and where mitigation would be required. Modeling was based on project-specific data. Modeling files are provided in Appendix B of this EIR. Predicted short-term construction-generated emissions associated with the project were compared with applicable SCAQMD regional thresholds for determination of significance.

In addition, to determine whether or not construction activities associated with the proposed project would create significant adverse localized air quality impacts on nearby sensitive receptors, the worst-case daily emissions contribution from the proposed project were compared to SCAQMD's LSTs that are based on the pounds of emissions per day that can be generated by a project without causing or contributing to adverse localized air quality impacts. The daily total on-site combustion, mobile, and fugitive dust emissions associated with each construction phase were combined and evaluated against SCAQMD's LSTs for a five-acre site, which provides a conservative evaluation because it estimates emissions of the entire project area and concentrates them into a 5-scre site.

Operational Emissions

Long-term (i.e., operational) regional emissions of criteria air pollutants and precursors, including mobile- and area-source emissions, were also quantified using the CalEEMod computer model. Area-source emissions were modeled according to the size and type of land uses proposed. Mass mobile-source emissions were modeled based on the increase in daily vehicle trips that would result from the project. Project trip generation rates were available from the traffic impact analysis prepared for the project (see Appendix J of this EIR). Predicted long-term operational emissions were compared with applicable SCAQMD thresholds for determination of significance.

3.3.4 Project Impacts

Impact 3.3-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. As the project site is located within the Basin, which is under the jurisdiction of SCAQMD, the SCAQMD's AQMP is the applicable air quality plan for the proposed project. Projects that are consistent with the regional population, housing, and employment forecasts identified by SCAG are considered to be consistent with the AQMP growth projections, since the forecast assumptions by SCAG forms the basis of the land use and transportation control portions of the AQMP. Additionally, because SCAG's regional growth forecasts are based upon, among other things, land uses designated in general plans, a project that is consistent with the land use designated in a general plan would also be consistent with the SCAG's regional forecast projections, and thus also with the AQMP growth projections.

The project site is currently designated under the County General Plan as Open Space (OS), which identifies land containing non-renewable and renewable resource cares, materials recovery/recycling facilities, and employment uses in conjunction with large open space areas if they are consistent with the open space character of the area. Since the project proposes to develop a total of 72 single-family residences, and the project includes a General Plan land use designation amendment from OS to Rural Residential (1A).

Although the proposed project would require a General Plan Amendment, the project would not result in a development density that is inconsistent with SCAG's growth forecasts. As discussed in Section 3.12, *Population and Housing*, of this EIR, the estimated net increase of 230 new residents that would result from the proposed 72 units would only constitute approximately 0.41 percent of the projected population growth in the unincorporated area of the County; and 0.07 percent of the entire County's projected population growth in 2035. In addition, development of

the 584.1-acre project site per its existing zoning designation of General Agricultural (A1), which allows for four acres per dwelling unit, would result in a build out of 146 dwelling units on the project site. The proposed project would only develop 72 residential units, and the remainder of the project site would consist of preserved open space, landscaping, and fuel modification areas that would not be developed. Therefore, the proposed project would result in fewer residential units than the allowable under the existing zoning criteria, and would be consistent with the growth projections in the County's General Plan, which are based on land use and zoning designations.

Thus, the population increase resulting from the proposed project would not exceed SCAG's growth projections. The housing provided by the project would serve to meet an existing housing demand that is already accounted for by SCAG for the region. As such, the proposed project would not conflict with, or obstruct, implementation of the AQMP and impacts would be less than significant.

Impact 3.3-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction

Less than Significant Impact. The proposed project would involve the development of 72 single-family residences and the associated infrastructure, including roadways, water lines, septic systems, fuel modification areas, vineyards, landscaping, and other associated amenities. Pollutant emissions associated with project construction would be generated from the following construction activities: (1) site preparation, grading, and excavation; (2) construction workers traveling to and from project site; (3) delivery and hauling of construction supplies to, and debris from, the project site; (4) fuel combustion by onsite construction equipment; (5) building construction; application of architectural coatings; and paving. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants.

The amount of emissions generated on a daily basis would vary, depending on the intensity and types of construction activities occurring. The development area for Phase 1 (south parcel) includes 42.7 acres of residential building pads, and 65.9 acres of streets, landscape, fuel modification, and vineyards. Phase 1 (south parcel) would require cut and fill of soils, which would be balanced onsite and would not require import or export haul trips. A maximum of 10,000 cubic yards would be graded, excavated, or filled on a maximum day.

The development area for Phase 2 (north parcel) includes 32.0 acres of residential building pads, and 28.9 acres of streets, landscape, fuel modification, and vineyards. Phase 2 (north parcel) also requires cut and fill, which would be balanced onsite and would not require import or export haul trips. A maximum of 10,000 cubic yards of soils would be also be excavated or graded per day for development of the Phase 2 (north parcel).

Construction emissions are short-term and temporary. The maximum daily construction emissions for the proposed project were estimated using CalEEMod; and the modeling includes compliance with SCAQMD Rules 403, 481, 1108, 1113, and 1143 (described above), which

reduces air contaminants during construction. **Table 3.3-6** provides the maximum daily emissions of criteria air pollutants from construction of the project during both summer and winter seasons for both project phases.

TABLE 3.3-6
PROPOSED PROJECT CONSTRUCTION EMISSIONS

	Estimated Maximum Daily Emissions (lbs/day)					
Construction Activities	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
			Phase 1			
Summer	29.61	85.08	61.14	0.10	10.77	6.54
Winter	29.65	85.09	61.03	0.10	10.77	6.54
Regional Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	No	No	No	No	No	No
			Phase 2			
Summer	40.69	51.33	37.82	0.06	9.13	5.43
Winter	40.69	51.33	37.73	0.06	9.13	5.43
Regional Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	No	No	No	No	No	No

Source: 2016 CalEEMOD modeling, Entech Consulting, see Appendix B for model output.

As shown, the maximum daily construction emissions would not exceed any of SCAQMD's daily significance thresholds for either project phase. Thus, the construction of the proposed project would not result in a violation of an air quality standard or substantially contribute to an existing or projected air quality violation, and impacts related to project construction would be less than significant.

Operation

Less than Significant Impact. Implementation of the proposed project would result in long-term emissions of criteria air pollutants from area sources generated by the proposed residential uses, such as vehicular emissions, natural gas consumption, landscaping, applications of architectural coatings, and use of consumer products. According to the traffic impact analysis prepared for the project, the proposed residential uses would generate 690 additional vehicle trips per day (see Appendix J of this EIR).

Operation emissions associated with the proposed project are provided in **Table 3.3-7**. As shown, the long-term emissions of criteria air pollutants that would be generated by operation of the proposed 72 single-family residences would be below SCAQMD's thresholds. Therefore, the project's operational emissions would not result in a violation of an air quality standard or substantially contribute to an existing or projected air quality violation, and impacts related to operation of the proposed project would be less than significant.

TABLE 3.3-7
PROPOSED PROJECT OPERATIONAL EMISSIONS

	Estimated Maximum Daily Emissions (lbs/day)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area Sources	3.11	1.26	6.51	0.008	0.13	0.13
Electricity Consumption and Natural Gas Combustion	0.07	0.57	0.24	0.004	0.05	0.05
Mobile Sources	1.85	8.59	25.23	0.069	5.10	1.43
Total Emissions	**5.03**	**10.42**	**31.98**	**0.08**	**5.28**	**1.60**
Regional Significance Threshold	*55*	*55*	*550*	*150*	*100*	*55*
Significant Impact?	No	No	No	No	No	No

Note: Operational emissions would be different during summer and winter. Maximum daily emissions of ROG and NO_X would be higher during the winter while emissions of CO and SO_2 would be higher in the summer. The maximum emissions for each pollutant over the course of the summer and winter seasons are shown in this table.
Source: 2016 CalEEMOD modeling, Entech Consulting, see Appendix B for model output.

Impact 3.3-3: Would the project 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)?

Less than Significant Impact. According to SCAQMD's methodology, if an individual project results in air emissions of criteria pollutants (ROG, CO, NOx, SOx, PM_{10}, and $PM_{2.5}$) that exceeds the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the proposed project region is in non-attainment under an applicable federal or state ambient air quality standard.

As described in Impact 3.3-2 above, emissions from construction and operations of the proposed project would be below SCAQMD's thresholds (see **Tables 3.3-6** and **3.3-7**). Therefore, the proposed project's construction and operational emissions contribution would be less than cumulatively considerable, and cumulative air quality impacts would be less than significant.

Impact 3.3.4: Would the project expose sensitive receptors to substantial pollutant concentrations.

CO Hotspots

Less than Significant Impact. CO concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions), particularly during peak commute hours and certain meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses such as residential areas, schools, and hospitals. As a result, SCAQMD recommends analysis of CO emissions at a local and regional level.

An appropriate qualitative screening procedure is provided in the procedures and guidelines contained in *Transportation Project-Level Carbon Monoxide Protocol* (the Protocol) to determine

whether a project poses the potential for a CO hotspot (UCD ITS, 1997). This is the protocol recommended by the California Department of Transportation (Caltrans) for project-level air quality analysis needed for federal conformity determinations, and is the standard method for project-level CO analysis used by Caltrans. A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. According to the Protocol, projects may worsen air quality if they increase the percentage of vehicles in cold start modes by two percent or more; significantly increase traffic volumes (by five percent or more) over existing volumes; or worsen traffic flow, defined for signalized intersections as increasing average delay at intersections operating at level of service (LOS) E or F or causing an intersection that would operate at LOS D or better without the project, to operate at LOS E or F.

The proposed project's traffic analysis (see Appendix J of this EIR) indicates that none of the signalized intersections that were analyzed would operate at LOS E or LOS F under 2017 cumulative conditions. However, under 2035 cumulative conditions without the project, the traffic analysis indicates that LOS E would occur at the signalized intersection of Antonio Parkway/La Pata Avenue and Ortega Highway during the a.m. peak hour, and LOS F would occur at the signalized intersection of Ortega Highway and Grand Avenue during the p.m. peak hour (under the scenario without intersection improvements). As such, given these future 2035 traffic conditions, the addition of traffic associated with the project would increase the average delay at these two intersections that are projected to operate at LOS E and F conditions in 2035, and as a result may worsen CO concentrations at these two intersections.

Based on the future (2035) with project traffic volumes that would occur at the two intersections where acceptable LOS would be exceeded, it was determined that the greatest peak hour traffic volume at the intersection of Antonio Parkway/La Pata Avenue and Ortega Highway would be 6,598 vehicles during the a.m. peak hour and the greatest peak hour traffic volume at the intersection of Ortega Highway and Grand Avenue would be 4,027 vehicles during the p.m. peak hour. Although the Antonio Parkway/La Pata Avenue and Ortega Highway intersection and the Ortega Highway and Grand intersection would operate at LOS E and LOS F under future (2035) with project conditions, respectively, the peak hour traffic volumes occurring at these two intersections would not be substantial enough to result in CO hotspots.

Various air quality agencies in California have developed conservative CO hotspot screening methods, though the SCAQMD has not developed quantitative CO screening criteria. For instance, the Sacramento Metropolitan Air Quality Management District (SMAQMD) states that a project would result in a less-than-significant impact to air quality for local CO if a project would not result in an affected intersection experiencing more than 31,600 vehicles per hour, while the Bay Area Air Quality Management District (BAAQMD) uses a traffic volume of 44,000 vehicles per hour as the threshold for CO analysis. Thus, the 6,598 and 4,027 vehicles per hour that would occur at the intersection of Antonio Parkway/La Pata Avenue and Ortega Highway and the intersection of Ortega Highway and Grand Avenue, respectively, from implementation of the project would not result in an air quality impact associated with CO hotspots. Furthermore, with implementation of the planned intersection improvement at Ortega Highway and Grand Avenue, the p.m. peak hour would improve to LOS D. As such, impacts

associated with CO hotspots resulting from implementation of the project would be less than significant.

Localized Construction Air Quality Impacts – Criteria Air Pollutants

Less than Significant Impact. As discussed previously, the daily construction emissions generated onsite by the proposed project at Phase 1 (south parcel) and Phase 2 (north parcel) are evaluated against SCAQMD's LSTs for a five-acre site as a conservative screening analysis to determine whether the emissions would cause or contribute to adverse localized air quality impacts.[4]

Since the mass rate look-up tables provided by SCAQMD only provides LSTs at receptor distances of 82, 164, 328, 656, and 1,640 feet, the LSTs for a receptor distance of 1,640 feet is used to evaluate Phase 1 (south parcel), and the LSTs for a receptor distance of 164 feet is used to evaluate Phase 2 (north parcel). **Table 3.3-8** identifies daily localized onsite emissions that are estimated to occur during construction of both phases of the proposed project.

TABLE 3.3-8
PROPOSED PROJECT LOCALIZED DAILY CONSTRUCTION EMISSIONS

	Estimated Maximum Daily Emissions (lbs/day)			
Construction Activities	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Phase 1				
Site Preparation Emissions	33.72	22.96	6.37	3.93
Significance Threshold[c]	*1,072*	*29,256*	*207*	*105*
Significant Impact?	No	No	No	No
Grading and Excavation Emissions	51.24	36.72	4.18	2.55
Significance Threshold[c]	*1,072*	*29,256*	*207*	*105*
Significant Impact?	No	No	No	No
Drainage/Utilities Emissions	23.55	17.87	0.90	0.90
Significance Threshold	*1,072*	*29,256*	*207*	*105*
Significant Impact?	No	No	No	No
Building Construction Emissions	23.55	17.87	0.90	0.90
Significance Threshold	*1,072*	*29,256*	*207*	*105*
Significant Impact?	No	No	No	No
Paving Emissions	20.11	17.30	0.67	0.67
Significance Threshold	*1,072*	*29,256*	*207*	*105*
Significant Impact?	No	No	No	No
Architectural Coatings Emissions	0.02	0.26	0.05	0.01
Significance Threshold	*1,072*	*29,256*	*207*	*105*
Significant Impact?	No	No	No	No
Total Phase 1 Emissions				
Total Phase 1 Emissions	**152.19**	**112.98**	**13.07**	**8.96**
Significance Threshold	*1,072*	*29,256*	*207*	*105*

[4] According to SCAQMD's LST methodology, LSTs are only applicable to the on-site construction emissions that are generated by a project and do not apply to emissions generated offsite such as mobile emissions on roadways from worker, vendor, and haul truck trips.

Construction Activities	Estimated Maximum Daily Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Significant Impact?	No	No	No	No
Phase 2				
Site Preparation Emissions	33.72	22.96	9.08	5.42
Significance Threshold	*416*	*2,714*	*40*	*10*
Significant Impact?	No	No	No	No
Grading and Excavation Emissions	51.24	36.72	4.88	2.93
Significance Threshold	*416*	*2,714*	*40*	*10*
Significant Impact?	No	No	No	No
Drainage/Utilities Emissions	23.55	17.87	0.90	0.90
Significance Threshold	*416*	*2,714*	*40*	*10*
Significant Impact?	No	No	No	No
Building Construction Emissions	23.55	17.87	0.90	0.90
Significance Threshold	*416*	*2,714*	*40*	*10*
Significant Impact?	No	No	No	No
Paving Emissions	20.11	17.30	0.67	0.67
Significance Threshold	*416*	*2,714*	*40*	*10*
Significant Impact?	No	No	No	No
Architectural Coatings Emissions	2.35	1.83	0.10	0.10
Significance Threshold	*416*	*2,714*	*40*	*10*
Significant Impact?	No	No	No	No
Total Phase 2 Emissions				
Total Phase 2 Emissions	**154.52**	**114.55**	**16.53**	**10.92***
Significance Threshold	*416*	*2,714*	*40*	*10*
Significant Impact?	No	No	No	No*

* All of the phases would not overlap (i.e. site preparation and building construction would not occur simultaneously). Thus, actual $PM_{2.5}$ maximum daily emissions would be less than the threshold of 10.
Source: 2016 CalEEMOD modeling, Entech Consulting, see Appendix B for model output.

As shown in **Table 3.3-8**, the daily emissions generated onsite by the proposed project during all phases of construction would not exceed the applicable SCAQMD LSTs. Therefore, localized air quality impacts resulting from project construction would be less than significant.

Localized Construction Air Quality Impacts – Toxic Air Contaminants

Less than Significant Impact. Project construction would result in short-term emissions of diesel PM, a toxic air contaminant (TAC). Diesel PM poses a carcinogenic health risk that is measured using an exposure period of 70 years. The exhaust of off-road heavy-duty diesel equipment would emit diesel PM during site preparation (e.g., clearing); site grading and excavation; paving; installation of utilities, materials transport and handling; building construction; and other miscellaneous activities. SCAQMD has not adopted a methodology for analyzing such impacts and has not recommended that health risk assessments be completed for construction-related emissions of TACs.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., the potential exposure to TACs to be compared to applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, carcinogenic health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period or duration of activities associated with the proposed project.

The construction period for the proposed project would be much less than the 70-year period used for risk determination. Because off-road heavy-duty diesel equipment would be used only for short time periods, project construction would not expose sensitive receptors to substantial emissions of TACs. This impact would be less than significant.

Operation

Less than Significant Impact. As the proposed project would involve the development of low-density, single-family residential uses at the project site, it would not introduce any new stationary sources of TACs, such as diesel-fueled backup generators that are more commonly associated with large commercial and industrial uses. Therefore, the project would not expose surrounding sensitive receptors to TAC emissions.

CARB's Handbook includes the recommendation to avoid the siting of new sensitive land uses (e.g., residences, schools) within 500 feet of freeways, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. Ortega Highway, which experiences the highest traffic volumes in the project vicinity, is located more than 2,000 feet from the project site. In addition, the projected 2017 and 2035 average daily trip (ADT) volumes on roadways in the proposed project area are less than CARB's specified criteria. Under future 2017 with project conditions, the highest daily traffic volumes on the segment of Ortega Highway that passes by the project site is approximately 13,200 ADT. In 2035, which is the year used to evaluate the long-range conditions of the project in the traffic impact analysis, the maximum daily traffic volumes with the project on Ortega Highway is approximately 18,600 ADT. Therefore, the location of the proposed sensitive uses would be in concurrence with CARB recommendations. Additionally, based on CARB's CHAPIS, no major TAC sources are located near the project site. Based on the criteria in the CARB guidance document, the proposed project would not have the potential to expose sensitive receptors to TACs from mobile sources to an extent that health risks could result, and impacts would be less than significant.

3.3.5 Cumulative Impacts

The project site is located within the South Coast Basin, which is considered the cumulative study area for air quality. As discussed in Impact 3.3-3, SCAQMD recommends that if an individual project results in air emissions of criteria pollutants (ROG, CO, NOx, SOx, PM_{10}, and $PM_{2.5}$) that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the

proposed project region is in non-attainment under an applicable federal or state ambient air quality standard.

As described above, all criteria pollutants generated by construction of the project would be below SCAQMD's thresholds. Thus, construction of the proposed project would result in a less than cumulatively considerable impact related to air quality.

In addition, the operational emissions associated with the proposed project would not exceed the SCAQMD's thresholds of significance for any of the criteria pollutants (see **Table 3.3-7**). Furthermore, the proposed project would be consistent with SCAQMD's AQMP. Thus, the proposed project would not conflict with SCAQMD's air quality planning efforts for nonattainment pollutants and would not lead to a cumulatively considerable net increase in nonattainment pollutants during operations. Overall, the proposed project's construction and operational emissions would be less than cumulatively considerable, and less than significant.

3.4 Biological Resources

The purpose of this section is to analyze the project's potential impacts on biological resources on the project site and vicinity. The analysis in this section is based on the following reports (see **Appendices C1** through **C4** of this EIR for full copies of these reports):

- *Biological Resources Assessment, The Preserve*, prepared by PCR Services Corporation, August 25, 2008; Updated July 2, 2014 (Appendix C1);
- *Jurisdictional Delineation of The Study Area of The Preserve at San Juan*, prepared by Glenn Lukos Associates, August 5, 2013; Updated July 1, 2014 (Appendix C2);
- *The Preserve at San Juan Tree Management and Preservation Plan, Draft,* prepared by Dudek, August 2013; Updated July 2014 (Appendix C3); and
- *Results of Focused Dry Season Vernal Pool Brachiopod Surveys for The Preserve Project Site,* prepared by PCR Services Corporation, October 3, 2013 (Appendix C4).

Unless otherwise indicated, the information below is cited from the Biological Resources Assessment (BRA) prepared by PCR. The study area analyzed in the BRA encompasses 745 acres, which is larger than, and includes, the footprint of the proposed project. This allows the analysis to include effects to the larger area, include any potential edge effects. Additionally, because the biological resource study area is larger than the project site and the proposed disturbance areas, the acreages of biological resources below do not correspond to the project development acreages described in Section 2.0, *Project Description*.

3.4.1 Environmental Setting

Existing Conditions

As detailed in Chapter 2, *Project Description,* the project site is located within a rural portion of unincorporated Orange County and consists of two non-contiguous parcels. Elevations of the project site range from 2,335 feet above mean sea level (amsl) in the south to 3,346 feet amsl in the north.

Phase 1 (south parcel) consists of gently sloping terrain in the northeast portion of the parcel to steep, rugged terrain in the remainder of the parcel. The majority of the parcel is undisturbed and supports dense chaparral habitat and areas of oak woodland. Two United States Geological Survey (USGS) blueline streams exist on the site. Long Canyon Creek is a blueline stream that crosses the northeast corner of the parcel, and an unnamed blueline stream, bisects the center of the parcel from north to south.

Phase 2 (north parcel) consists of gently sloping and steep, rugged terrain, and supports dense chaparral habitat and scattered patches of oak woodland. Long Canyon Creek, also crosses the southwest corner of the Phase 2 (north parcel).

The Orange County portion of the study area is located within the Southern Subregion Natural Communities Conservation Plan (SSNCCP); however, is outside of the Rancho Mission Viejo planning area and, therefore, is not subject to the policies set forth in the SSNCCP. In addition,

the off-site areas within Riverside County are within the central western portion of the Elsinore Area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

Plant Communities/Habitat

Descriptions of each of the plant communities found within the study area are provided below. Plant community names and descriptions follow the Orange County Habitat Classification System (OCHCS). If a community did not conform to any of the communities in the OCHCS, it was named after the dominant species found within it (e.g., Deerweed Series). A description of the plant communities mapped within the biological resources study area is provided below, and **Figure 3.4-1** depicts their location. Representative photographs of plant communities is provided in the Biological Resources Assessment (Appendix C1 of this EIR).

Black sage scrub (OCHCS 2.3.4) comprises approximately 1.5 acres on-site in the southwestern portion of Phase 2 (north parcel). Black sage scrub is dominated by black sage (*Salvia mellifera*) with California buckwheat (*Eriogonum fasciculatum*) as a sub-dominant species.

Buckwheat scrub (OCHCS 2.3.7) occupies approximately 0.8 acre along the southwestern boundary of Phase 2 (north parcel), 0.2 acre within the south-central portion of Phase 1 (south parcel), and 0.1 acre off-site. Buckwheat scrub is dominated by California buckwheat.

Buckwheat scrub/hoaryleaf ceanothus chaparral (OCHCS 2.3.7/3.4) consists of 1.2 acres in the northeastern portion of Phase 1 (south parcel). This community contains the dominant species of both buckwheat scrub and hoaryleaf ceanothus (*Ceanothus crassifolius*) chaparral (hoary leaf ceanothus chaparral is described below).

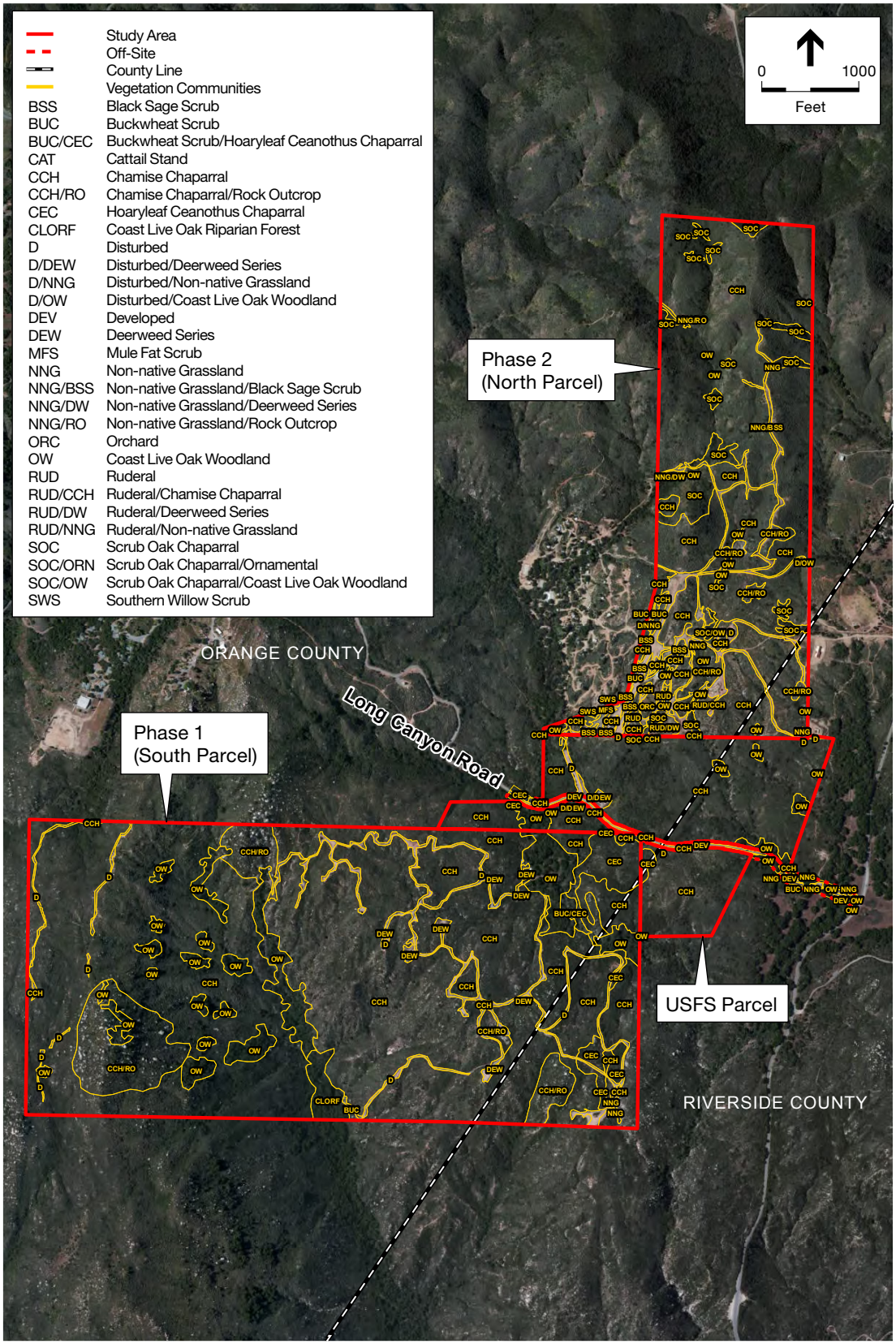
Chamise chaparral (OCHCS 3.3) is the dominant plant communities within the biological resources study area. This plant community is dominated by chamise with black sage as a sub-dominant.

Chamise chaparral/rock outcrop (OCHCS 3.3/10.3) occupies 38.5 acres on-site (6.3 acres scattered in the southern half of Phase 2 (north parcel) and 32.2 acres throughout Phase 1 (south parcel)).

Deerweed series (OCHCS n/a) occurs in areas that have been disturbed, particularly along the dirt roads on Phase 1 (south parcel). A total of 1.7 acres of deerweed series was mapped throughout the eastern half of Phase 1 (south parcel). The dominant species in this community is deerweed.

Hoaryleaf ceanothus chaparral (OCHCS 3.4) is dominated by hoaryleaf ceanothus. Hoaryleaf ceanothus chaparral consists of a dense canopy cover with an understory consisting mostly of bare ground and leaf litter. Approximately, 13.8 acres are located in the eastern portion of Phase 1 (south parcel).

Scrub oak chaparral (OCHCS 3.7) is dominated by scrub oak. Laurel sumac, hoaryleaf ceanothus, and toyon (*Heteromeles arbutifolia*) occur as subdominant species. A total of 13.7 acres are located in scattered patches throughout Phase 2 (north parcel).



NOTE: The study area analyzed in the BRA encompasses 745 acres, which is larger than, but includes, the footprint of the proposed project because the biological resources analysis was conducted prior to the project design being finalized.

SOURCE: PCR, 2014

The Preserve at San Juan

Figure 3.4-1

Plant Communities

Scrub oak chaparral/ornamental (OCHCS 3.7/15.5) is mapped in the southwest corner of Phase 2 (north parcel) and consists of scrub oak chaparral mixed with planted ornamental species. A total of 0.1 acre of scrub oak chaparral/ornamental occurs on-site.

Scrub oak chaparral/coast live oak woodland (OCHCS 3.7/8.1) occurs in the south-central portion of Phase 2 (north parcel) and supports species typical of scrub oak chaparral and coast live oak woodland (described below). A total of 0.5 acre of scrub oak chaparral/coast live oak woodland occurs on-site.

Coast live oak woodland (OCHCS 8.1) comprises 1.5 acres in scattered patches throughout Phase 2 (north parcel) and 32.8 acres throughout Phase 1 (south parcel).

Coast live oak forest (OCHCS 9.1) consists of 4.4 acres in the south-central portion of Phase 1 (south parcel). This community consists of a denser canopy cover of coast live oak than coast live oak woodland described above.

Southern willow scrub (OCHCS 7.2) occurs in three small patches in the southwestern portion of Phase 2 (north parcel) (one patch is associated with Seasonal Pond 5). This area is approximately 0.2 acre and is dominated by willow species, including black willow (*Salix gooddingii*) and red willow (*Salix laevigata*).

Mule fat scrub (OCHCS 7.3) occupies approximately 0.2 acre (0.1 acre on the southwestern panhandle of Phase 2 (north parcel) and 0.1 acre off-site). In this section, the soil was moist and supported a community where mule fat (*Baccharis salicifolia*) was the dominant shrub. The on-site community of mule fat scrub also supported occasional willows (*Salix spp*.) and an understory of herbaceous plant types including western ragweed (*Artemisia psilostachya*).

Cattail stand, which is referred to in OCHCS as freshwater seep (OCHCS 5.3), occupies a small depression kept wet by a continually dripping water spigot and occupies less than 0.1 acre (associated with Seasonal Pond 3) in the south-central portion of Phase 2 (north parcel). Cattail (*Typha sp.*) and rush (*Juncus sp.)* are the dominant plant types here.

Non-native grassland (OCHCS 4.1) comprises 0.4 acre in a few widely-scattered patches throughout Phase 2 (north parcel) and 0.2 acre in the southeast corner of Phase 1 (south parcel)). Non-native grassland is associated with areas that have been disturbed and is dominated by slender wild oat (*Avena barbata*), foxtail chess, and ripgut grass.

Non-native grassland/deerweed series (OCHCS 4.1/n/a) is dominated by non-native grasses but also has significant amounts of deerweed. This community is dominated by rattail fescue and deerweed and comprises a 0.4-acre patch on Phase 2 (north parcel).

Non-native grassland/rock outcrop (4.1/10.3) is dominated by non-native grassland but supports rock outcrops and consists of approximately 0.3 acre along a drainage feature in the northwestern portion of Phase 2 (north parcel).

Non-native grassland/black sage scrub (OCHCS 4.1/2.3.4) is dominated by non-native grassland; however, black sage is a subdominant plant. This community occupies less than 0.1 acre on Phase 2 (north parcel).

Ruderal (OCHCS n/a) areas comprise 0.5 acre on-site in the southwestern portion of Phase 2 (north parcel). Ruderal areas have been disturbed and non-native forbs, or broad-leaved plants, are the dominant species found, rather than non-native grasses. These areas are dominated by prickly sow thistle (*Sonchus asper* ssp. *asper*) and black mustard.

Ruderal/chamise chaparral (OCHCS n/a/3.3) is dominated by ruderal species but chamise is established as a sub-dominant species. This community occupied 0.2 acre in the south-central portion of Phase 2 (north parcel).

Ruderal/deerweed series (n/a/n/a), which comprised of ruderal vegetation in which deerweed was a subdominant shrub, was found near the southern boundary of Phase 2 (north parcel) and occupies 1.1 acres of the study area.

Ruderal/non-native grassland (n/a/4.1) consisting of a ruderal area with a sub-dominance of non-native grasses was observed in the southern portion of Phase 2 (north parcel) and occupies approximately 0.1 acre of the study area.

Disturbed (OCHCS 16.0) areas comprise 17.0 acres on Phase 2 (north parcel) and 13.5 acres on Phase 1 (south parcel). Plant species found in the disturbed areas include red-stemmed filaree, white-stemmed filaree, tocalote, California filago (*Filago californica*), deerweed, black mustard, rattail fescue, slender wild oat, foxtail chess, ripgut grass, soft chess, and Mediterranean schismus (*Schismus barbatus*).

Orchard (OCHCS 14.3) was mapped within the southern portion of Phase 2 (north parcel) parcel and occupies 0.7 acre.

Wildlife

The plant communities discussed above provide habitat for a variety of wildlife species. Wildlife that could be located within the biological resources study area are listed below by taxonomic group. Sensitive wildlife species occurring or potentially occurring are discussed further below.

Invertebrates

Common butterfly species observed during biological resource site visits include sara orangetip (*Anthocharis sara sara*), funereal dusky wing (*Erynnis zarucco funeralis*), fiery skipper (*Hylephila phyleus*), western tiger swallowtail (*Papilio rutulus rutulus*), orange sulphur (Colias eurytheme), painted lady (*Vanessa cardui*), mourning cloak (*Nymphalis antiopa*), Lorquin's admiral (*Limenitis lorquini*), Behr's metalmark (*Apodemia mormo virgulti*), and green hairstreak (*Callophrys affinis perplexa*).

Amphibians

Amphibian species observed within the study area during biological resource site visits include the coast range newt (*Taricha torosa torosa*), western toad (*Anaxyrus boreas*), Pacific tree frog (*Pseudacris regilla*) and California tree frog (*Pseudacris cadaverina*). These species, with the exception of the coast range newt, are not considered sensitive.

Reptiles

Reptile species observed within the study area include the western fence lizard (*Sceloporus occidentalis*), granite spiny lizard (*Sceloporus orcuttii*), side-blotched lizard (*Uta stansburiana*), coast horned lizard (*Phrynosoma coronatum*), San Diego alligator lizard (*Elgaria multicarinata webbi*), chaparral whipsnake (*Masticophis lateralis lateralis*), coastal rosy boa (*Charina trivirgata roseofusca)*, and northern red-diamond rattlesnake (*Crotalus ruber ruber*). These species, with the exception of the coast horned lizard, coastal rosy boa, and northern red-diamond rattlesnake, are not considered sensitive.

Avian

Representative avian species observed during the field visit include the California quail (*Callipepla californica*), mountain quail (*Oreortyx pictus*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), Nuttall's woodpecker (*Picoides nuttallii*), ash-throated flycatcher (*Myiarchus cinerascens*), western scrub jay (*Aphelocoma californica*), common raven (*Corvus corax*), oak titmouse (*Baeolophus inornatus*), Bewick's wren (*Thryomanes bewickii*), house wren (*Troglodytes aedon*), wrentit (*Chamaea fasciata*), California thrasher (*Toxostoma redivivum*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), song sparrow (*Melospiza melodia*), house finch (Carpodacus mexicanus), and lesser goldfinch (*Carduelis psaltria*).

Much of the habitat within the study area provides foraging opportunities for raptors, including red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), and red-shouldered hawk (*Buteo lineatus*) which were observed within the study area. The study area supports mature coast live oak woodland and forest which provide additional foraging opportunities for species such as Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*) and provides habitat for small mammals, which has the potential to result in a sizeable rodent population for raptors to prey on. Collectively, the availability of prey and perches would suggest that the study area is being used by a variety of raptor species.

Mammals

A number of mammal species reside within the region and may utilize the study area to foraging or for cover. Mammals observed within the study area include the California ground squirrel (*Spermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and mule deer (*Odocoileus hemionus*).

Special Status Biological Resources

There are numerous special status plant and wildlife species present, or potentially present, within the study area. Protected sensitive species are classified by either federal or state resource management agencies, or both, as threatened or endangered, under provisions of the federal and/or state Endangered Species Acts (FESA and CESA, respectively).

Special Status Plants

Sensitive plants include those listed, or candidates for listing, by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW),[1] and species considered sensitive by the California Native Plant Society (CNPS) (particularly Lists 1A, 1B, and 2). Several sensitive plant species were reported in the California Natural Diversity Data Base (CNDDB) from the vicinity. **Table 3.4-1** lists the sensitive plant species that have been observed within the biological resources study area or have some potential to occur within the study area. **Figure 3.4-2** depicts their location. As shown on **Table 3.4-1**, one sensitive plant species (Coulter's matilija poppy) has been observed within the biological resource study area and 12 other sensitive plant species have a low potential to exist within the study area.

Species that were determined to be absent from the study area due to the negative results of focused surveys or not expected to occur within the study area due to the lack of suitable habitat or location outside the species range are not listed on **Table 3.4-1**, but are listed in the Biological Resources Assessment included as Appendix C1.

Sensitive Plant Communities

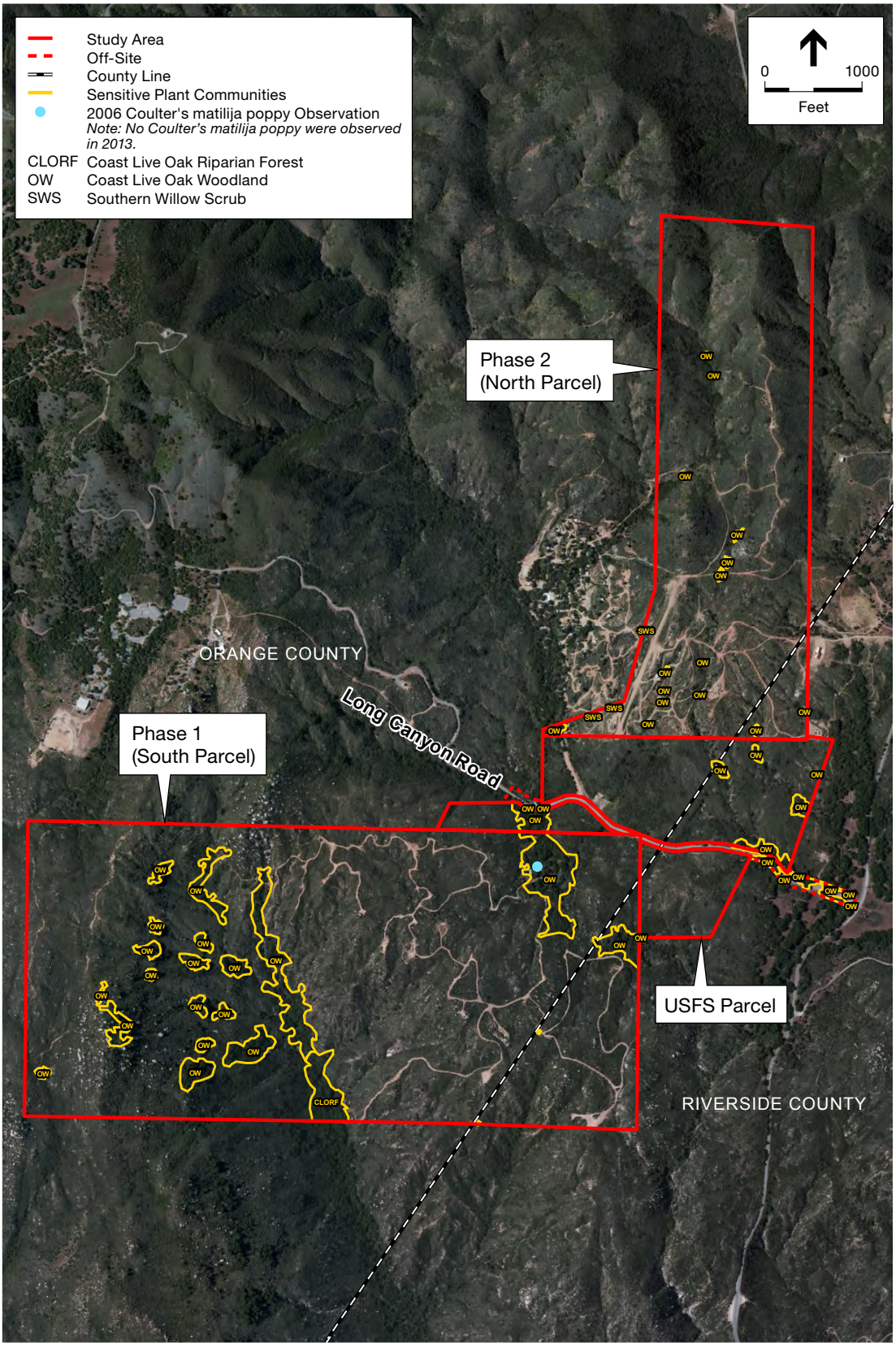
Sensitive plant communities are habitat types considered sensitive by resource agencies (CDFW), due to their scarcity and/or their ability to support state and federally-listed Endangered, Threatened, and Rare vascular plants, as well as several sensitive bird and reptile species.

Three sensitive plant communities were observed within the study area, including southern willow scrub, coast live oak woodland, and coast live oak forest, as shown in Figure 3.4-2.

According to the BRA, Southern willow scrub corresponds to CNDDB code 61.211.05. This community is considered high priority for inventory in the CNDDB. A total of 0.2 acre of southern willow scrub occurs within Phase 2 (north parcel).

The study area also supports 40.9 acres of coast live oak woodland (1.5 acres within Phase 2 (north parcel), 32.8 acres within Phase 1 (south parcel) and 4.4 acres of coast live oak forest within Phase 1 (south parcel), which are considered sensitive by the CDFW due to their potential to support sensitive species. In addition, oak woodlands are protected by state law (i.e., SB 1334-California Oak Woodland Law). Therefore, for the purposes of this assessment, Southern willow scrub, coast live oak woodland, and coast live oak forest are considered sensitive.

[1] The California Department of Fish and Game (CDFG) changed its name on January 1, 2013 to The California Department of Fish and Wildlife (CDFW). In this document, references to literature published by CDFW prior to January 1, 2013 are cited as 'CDFG.' The agency is otherwise referred to by its new name, CDFW.



NOTE: The study area analyzed in the BRA encompasses 745 acres, which is larger than, but includes, the footprint of the proposed project because the biological resources analysis was conducted prior to the project design being finalized.

SOURCE: PCR, 2014

The Preserve at San Juan

Figure 3.4-2
Sensitive Plant Communities and Sensitive Species Locations

TABLE 3.4-1
SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Flowering Period	Federal	State	CNPS Rank	Other	Preferred Habitat	Distribution	Occurrence On-site
Bryophytes									
Sphaerocarpaceae	**Liverwort Family**								
Sphaerocarpos drewei	Bottle liverwort	n/a	none	none	1B.1	none	Chaparral, coastal scrub; openings, soil. Between 90 and 600 meters.	Riverside and San Diego Cos.	P (Low)
Angiosperms (Dicotyledons)									
Brassicaceae	**Mustard Family**								
Caulanthus simulans	Payson's jewel flower	Mar.-Jun.	none	none	4.2	MSHCP USFS	Chaparral, coastal scrub, frequently in burned areas, streambeds, and rocky, steep slopes.	Riverside and San Diego Cos.	P (Low)
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	Jan.-Jul.	none	none	1B.2	none	Chaparral, coastal scrub.	San Diego, Orange, SE Los Angeles, SW San Bernardino, and western Riverside Cos.	P (Low)
Hydrophyllaceae	**Waterleaf Family**								
Phacelia keckii	Santiago Peak phacelia	May-Jun.	none	none	1B.3	USFS	Chaparral, closed-cone coniferous forests.	Orange and Riverside Cos.	P (Low)
Lamiaceae	**Mint Family**								
Lepechinia cardiophylla	heart-leaved pitcher sage	Apr.-Jul.	none	none	1B.2	MSHCP USFS	Open areas (esp. slopes) in chaparral, scrub, valley and foothill grasslands; vernal pools, topographic depressions; heavy clay soils; 2,000 - 4,200 feet.	Orange, Riverside, and San Diego Cos., Baja CA.	P (Low)
Monardella hypoleuca ssp. *intermedia*	Intermediate monardella	Apr.-Sept.	none	none	1B.3	none	Chaparral, cismontane woodland, lower montane coniferous forest (sometimes). 400-1250 meters.	Orange, Riverside, and San Diego Cos.	P (Low)
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	Jun.-Aug.	none	none	1B.2	USFS	Chaparral, cismontane woodland.	Orange and San Diego Cos.; Baja CA.	P (Low)

Scientific Name	Common Name	Flowering Period	Federal	State	CNPS Rank	Other	Preferred Habitat	Distribution	Occurrence On-site
Monardella macrantha ssp. *hallii*	Hall's monardella	Jun.-Aug.	none	none	1B.3	MSHCP USFS	Lower montane coniferous forest, valley and foothill grassland, broadleaf upland forest, chaparral, cismontane woodland. Typically occurs at elevations between 1,800 and 6,200 feet.	Orange, Riverside, San Bernardino, and San Diego Cos.	P (Low)
Clinopodium chandleri	San Miguel savory	Mar.-Jul.	none	none	1B.2	MSHCP USFS	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic, or metavolcanic.	Orange, Riverside, and San Diego Cos.; Baja CA.	P (Low)
Papaveraceae	**Poppy Family**								
Romneya coulteri	Coulter's matilija poppy[2]	Mar-July	none	none	4.2	MSHCP*	Dry washes and canyons in sage scrub and chaparral; below 4,000 feet.	Santa Ana Mtns. To San Diego Co.	OB
Polygalaceae	**Milkwort Family**								
Polygala cornuta var. *fishiae*	Fish's milkwort	May-Aug.	none	none	4.3	MSHCP*	Chaparral, cismontane woodland, riparian woodland.	Los Angeles, Orange, Riverside, Santa Barbara, San Diego, and Ventura counties, Baja CA.	P (Low)
Polygonaceae	**Buckwheat Family**								
Horkelia cuneata ssp. puberula	mesa horkelia[3]	Feb.-Sep.	none	none	1B.1	none	Chaparral, cismontane woodland, coast scrub: sandy or gravelly.	Los Angeles and Orange counties. May be extirpated from Riverside and San Diego counties.	P (Low)
Angiosperms (Monocotyledons)									
Liliaceae	**Lily Family**								

[2] Approximately 16 individuals of Coulter's matilija poppy were observed in one location in the northeast corner of Phase 1 (south parcel) in 2006; however, none were observed during the more recent sensitive plant surveys conducted in 2012-2013.

[3] With the exception of a 1983 occurrence of mesa horkelia, which has a 1 mile radius around a point location off-site, there are no CNDDB or CNPS records of any of these species occurring within the study area. The CNDDB data for this occurrence states that the exact location is unknown, but was found within Lion Canyon near the Chiquito Basin Trail, two miles south-southeast of Los Pinos Peak.

Scientific Name	Common Name	Flowering Period	Federal	State	CNPS Rank	Other	Preferred Habitat	Distribution	Occurrence On-site
Lilium humboldtii ssp. *ocellatum*	Ocellated Humboldt lily	Mar.-Jul.	none	none	4.2	MSHCP* USFS	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, openings.	Los Angeles, San Bernardino, Riverside, Orange, and San Diego Cos.	P (Low)

Key to Species Listing Status Codes:

Federal and State

FE Federally Listed as Endangered
FT Federally Listed as Threatened
FPE Federally Proposed as Endangered
FPT Federally Proposed as Threatened
FPD Federally Proposed for Delisting
FC Federal Candidate Species
SE State Listed as Endangered
ST State Listed as Threatened
SCE State Candidate for Endangered
SCT State Candidate for Threatened
SR State Rare
SFP State Fully Protected
SSC California Special Concern Species

CNPS

Rank 1A: Presumed extinct in California.
Rank 1B: Rare, threatened, or endangered throughout their range.
Rank 2: Rare, threatened, or endangered in California, but more common in other states.
Rank 3: Plant species for which additional information is needed before rarity can be determined.
Rank 4: Species of limited distribution in California (i.e., naturally rare in the wild), but whose existence does not appear to be susceptible to threat.

CNPS Threat Code extensions

.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat).
.2 Fairly endangered in California (20-80% occurrences threatened)
.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

MSHCP Covered Species
MSHCP* Species with additional requirements before they can be considered adequately conserved

Occurrence On-Site

OB – Species observed within the study area.
P (Low) – Although this species was not observed during focused surveys, there remains a low potential for this species to occur within portions of the study area outside of the project impact footprint that were inaccessible due to dense, impassible vegetation and steep terrain. The potential is only considered low since little to no understory is expected in the inaccessible areas based on dense canopies of chamise chaparral. In addition, those areas were studied using binoculars and no edges or open areas were observed.

Source: PCR, 2014.

Sensitive Wildlife Species

Sensitive wildlife includes those species listed as endangered or threatened under the FESA or CESA, candidates for listing by the USFWS or CDFW, species of special concern to the CDFW, and species considered sensitive by the U.S. Forest Service (USFS) (Cleveland National Forest). Several sensitive wildlife species were reported in the CNDDB from the vicinity.

Table 3.4-2 lists the sensitive wildlife species that have been observed within the biological resources study area or have potential to occur. **Figure 3.4-3** depicts their location. As shown on **Table 3.4-2**, six sensitive wildlife species (coast range newt, coast horned lizard, coastal rosy boa, northern red-diamond rattlesnake, white-tailed kite, and northern harrier) have been observed; 3 sensitive wildlife species (San Bernardino ringneck snake, San Diego mountain kingsnake, and northwestern San Diego pocket mouse) have a moderate potential to exist; and 9 sensitive wildlife species have a low potential to exist within the biological resource study area (Quino checkerspot butterfly, orange-throated whiptail, coast patch-nosed snake, golden eagle, long-eared owl, loggerhead shrike, western red bat, western mastiff bat, San Diego desert woodrat).

Species that were determined to be absent from the study area due to the negative results of focused surveys or not expected to occur within the study area due to the lack of suitable habitat or location outside the species range are not listed on **Table 3.4-2**, but are listed in the Biological Resources Assessment included as Appendix C1.

Wildlife Movement

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). Although the nature of each of these types of movement are species specific, large open spaces will generally support a diverse wildlife community representing all types of movement.

The study area is within a large open space area of the Santa Ana Mountains. The undisturbed nature of the area and resources provided by creeks and vegetated communities, in addition to travel routes provided by creeks, ridgelines, and dirt roads, facilitate wildlife movement.

The Riverside County areas adjacent to the project site are within the southeast portion of Core B of the MSHCP. Core B represents the second largest habitat block in the MSHCP. Studies of mountain lion movement within this Core indicated that this Core provides both live-in and linkage habitat for this mammal, which requires very large blocks of intact habitat. The Core then likely also provides linkage area for other mammals such as bobcat.

TABLE 3.4-2
SENSITIVE WILDLIFE SPECIES WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal	State	Other	Preferred Habitat	Distribution	Occurrence On-site
Invertebrates							
Insecta	*Grasshoppers, Katydids, Crickets, Beetles, Flies, Butterflies, Moths*						
Lepidoptera	**Butterflies and Moths**						
Euphydryas editha quino	Quino checkerspot butterfly [a]	FE	none	MSHCP	Grassland and open areas in sage scrub, chaparral, and sparse native woodlands. Low levels of invasive, nonnative vegetation and soil with a cryptogamic crust. Associated with host plant species dwarf plantain (*Plantago erecta*) and purple owl's clover (*Castilleja exserta*).	Orange, San Diego and w Riverside Cos. extending south into n Baja CA.	Low
Vertebrates							
Amphibians							
Salamandridae	**Newts**						
Taricha torosa torosa	coast range newt[b]	none	SSC	MSHCP	Lives in terrestrial habitats and migrates to breed in ponds, reservoirs, and slow-moving streams.	Mendocino Co. to San Diego Co.	OB
Reptiles							
Emydidae	**Box and Water Turtles**						
Phryonosomatidae	**Iguanid Lizards**						
Phrynosoma blainvillii	coast horned lizard [c]	none	SSC	MSHCP USFS	Valley-foothill hardwood, conifer, and riparian habitats, pine-cypress, juniper and annual grassland habitats below 6,000 feet, open country, especially sandy areas, washes, flood plains, and windblown deposits.	Coastal ranges and foothills of Sierra Nevada from San Francisco Bay Area and northern Central Valley south to San Diego and Baja CA.	OB

Teiidae	**Whiptails and Relatives**						
Aspidoscelis hyperythrus	orange-throated whiptail	none	SSC	MSHCP	Gently sloping hillsides, ridges, and valleys supporting open coastal sage scrub, open chaparral, or sparse grasslands.	Extreme s Los Angeles Co., SW San Bernardino Co., Orange, Riverside, and San Diego Cos. west of the crest of the peninsular Ranges, and Baja CA.	P (Low)
Boidae	**Boas**						
Charina trivirgata	rosy boa [d]	none	none	USFS	Desert and rocky areas in chaparral covered hillsides and canyons.	Throughout So. CA, south of Los Angeles Co. in coastal ranges to n Baja CA.	OB
Colubridae	**Colubrid Snakes**						
Diadophis punctatus modestus	San Bernardino ringneck snake	none	none	USFS	Open, relatively rocky areas within valley foothill, mixed chaparral, and annual grass habitats.	San Bernardino, Riverside and Orange Cos.	P (Moderate)
Lampropeltis zonata pulchra	San Diego mountain kingsnake	none	SSC	MSHCP USFS	Moist woods, coniferous forests, woodland and chaparral.	Peninsular Ranges of So. CA.	P (Moderate)
Salvadora hexalepis virgultea	coast patch-nosed snake	none	SSC	none	Coastal chaparral, desert scrub, washes, sandy flats, and rocky areas.	Point Conception south through Baja CA.	P (Low)
Viperidae	**Vipers**						
Crotalus ruber ruber	northern red-diamond rattlesnake [e]	none	SSC	MSHCP	Chaparral, woodland, and arid desert habitats in rocky areas with dense vegetation.	San Bernardino Co. to tip of Baja CA.	OB
Birds							
Accipitridae	**Hawks, Kites, Harriers, and Eagles**						
Elanus leucurus	white-tailed kite [f]	none	SFP	MSHCP	Grasslands with scattered trees, near marshes, along highways.	Length of state; breeding in lowlands from Sacramento to San Diego Cos.	OB,F
Circus cyaneus	northern harrier [g]	none	SSC	MSHCP	Coastal salt marshes, freshwater marshes, grasslands, and agricultural fields; occasionally forages over open desert and brushlands.	Alaska, Canada, to So. U.S.	OB,F

Aquila chrysaetos	golden eagle [h]	none	SFP	MSHCP	Mountains, deserts, and open country; prefer to forage over grasslands, deserts, savannahs and early successional stages of forest and shrub habitats. Nesting sites are usually located in secluded cliffs with overhanging ledges or in large trees.	Throughout CA with the exception of the center of the central valley.	P,F
Strigidae	**Owls**						
Asio otus	long-eared owl [i]	none	SSC	none	Dense riparian areas, thickets, woodlands, and forest.	Local resident throughout CA. Some seasonal movement away from nesting areas.	P (Low),F
Laniidae	**Shrikes**						
Lanius ludovicianus	loggerhead shrike	none	SSC	MSHCP	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.	Formerly a common resident throughout most of CA, becoming increasingly scarce in many areas in recent years.	P (Low)
Lasiurus blossevillii	western red bat [j]	none	SSC	USFS	Riparian and woodland habitats and urban areas.	Scattered throughout much of California at lower elevations.	P,B
Molossidae	**Free-tailed bats**						
Eumops perotis californicus	western mastiff bat [k]	none	SSC	none	Primarily arid lowlands, especially deserts. Open, semiarid to arid habitats including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban.	Uncommon resident of lower elevations in se San Joaquin Valley and Coastal Ranges from Monterey Co. southward through s CA from the coast eastward to the Colorado desert.	P,B
Heteromyidae	**Kangaroo rats, Pocket Mice, and Kangaroo Mice**						
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	none	SSC	MSHCP	Sandy herbaceous areas, usually in association with rocks or coarse gravel, sagebrush, scrub, annual grassland, chaparral and desert scrubs.	Common resident in SW CA; arid coastal areas of Orange, San Bernardino, and Riverside Cos. extending south into Baja CA.	P (Moderate)

Cricetidae	**Mice, Rats, and Voles**						
Neotoma lepida intermedia	San Diego desert woodrat	none	SSC	MSHCP	Chaparral, coastal sage scrub, and pinyon – juniper woodland.	S CA.	P (Low)

Key to Species Listing Status Codes:

Federal and State
FE Federally Listed as Endangered
FT Federally Listed as Threatened
FPE Federally Proposed as Endangered
FPT Federally Proposed as Threatened
FPD Federally Proposed for Delisting
FC Federal Candidate Species
SE State Listed as Endangered
ST State Listed as Threatened
SCE State Candidate for Endangered
SCT State Candidate for Threatened
SR State Rare
SFP State Fully Protected
SSC California Special Concern Species

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)
MSHCP Covered Species
MSHCP* Species with additional requirements before they can be considered adequately conserved

United States Department of Agriculture, Forest Service (USFS)
USFS Sensitive

Occurrence On-Site
OB – Species observed within the study area.
P (Low) – Although this species was not observed during focused surveys, there remains a low potential for this species to occur within portions of the study area outside of the project impact footprint that were inaccessible due to dense, impassible vegetation and steep terrain. The potential is only considered low since little to no understory is expected in the inaccessible areas based on dense canopies of chamise chaparral. In addition, those areas were studied using binoculars and no edges or open areas were observed.

Source: PCR, 2014.

[a] Focused surveys were not conducted for the Quino checkerspot butterfly. The study area is not within the USFWS recommended survey area (i.e., 2005 QCB Survey Area). However, on February 21, 2014, the USFWS issued an updated protocol and QCB Survey Areas map, which includes the study area within the 2014 QCB Survey Area. Although this species is not known to occur within the area (nearest recorded occurrences are within Riverside County 4.4 miles to the east [1983] and 6.6 miles to the east-northeast [2002]) and patches of potentially suitable habitat within a matrix of predominantly unsuitable habitat reduce the likelihood of this species being found, there may be a low potential for the study area to support Quino checkerspot butterfly. Because the protocol was issued on February 21st and survey protocol requires that focused surveys begin during the third week of February, and due to subsequent starts and stops in the project schedule, a habitat assessment was not conducted prior to the preparation of the Biological Resources Assessment. Therefore, a habitat assessment by a Quino biologist and/or coordination by the USFWS are recommended to determine whether focused protocol surveys should be conducted to conclusively determine the potential for this species to occur within the study area (USFWS, 2014).
[b] One adult coast range newt was observed within the coast live oak forest in the south-central portion of Phase 1 (south parcel). Additionally, several juvenile coast range newts were observed in two locations off-sites within Long Canyon Creek just east of Phase 1 (south parcel) boundary; however, these two observations are not within the study area boundary.
[c] The coast horned lizard was observed on-site within the eastern portion of Phase 2 (north parcel) and along a dirt road on Phase 1 (south parcel).
[d] The coastal rosy boa was observed in the spring of 2006 in the southeast portion of Phase 2 (north parcel).
[e] The northern red-diamond rattlesnake was observed in the southwest portion of Phase 2 (north parcel).
[f] The white-tailed kite was observed within the study area.
[g] The northern harrier was observed within the study area.
[h] Although there are rock outcrops and oak woodland on the ridgeline to the west of Drainage B, there are no known occurrences within this area (Bloom, 2013; CDFW, 2013; USFWS, 2013). Furthermore, there are no known current or historic CNDDB or USFWS occurrences within five miles of the study area. The nearest CNDDB occurrence is located 5.1 miles west-southwest of the southern westernmost corner of Phase 1 (south parcel), just east of Coto de Caza. Although this species is not expected to breed on-site, there is potential for golden eagle to utilize portions of the study area supporting grasslands and open scrublands for foraging.
[i] Although there is very low potential for this species to occur within the study area, this is limited to potential habitat within the coast live oak woodland and forest located in Phase 1 (south parcel), which would be avoided by the proposed project.
[j] There is potential roosting habitat within the coast live oak woodland and forest within Phase 1 (south parcel), which would be avoided by the proposed project.
[k] There is potential roosting habitat within the rock outcrop areas within Phase 1 (south parcel), which would be avoided by the proposed project.

Regulated Trees

Dudek & Associates conducted an inventory and evaluation of native trees (see Appendix C3 of this EIR). Oak trees in unincorporated Orange County are subject to management guidelines outlined in California State Public Resources Code (PRC) 21083.4 (Senate Bill 1334, as adopted). In addition, oak trees within Riverside County are subject to Riverside County Oak Tree Management Guidelines.

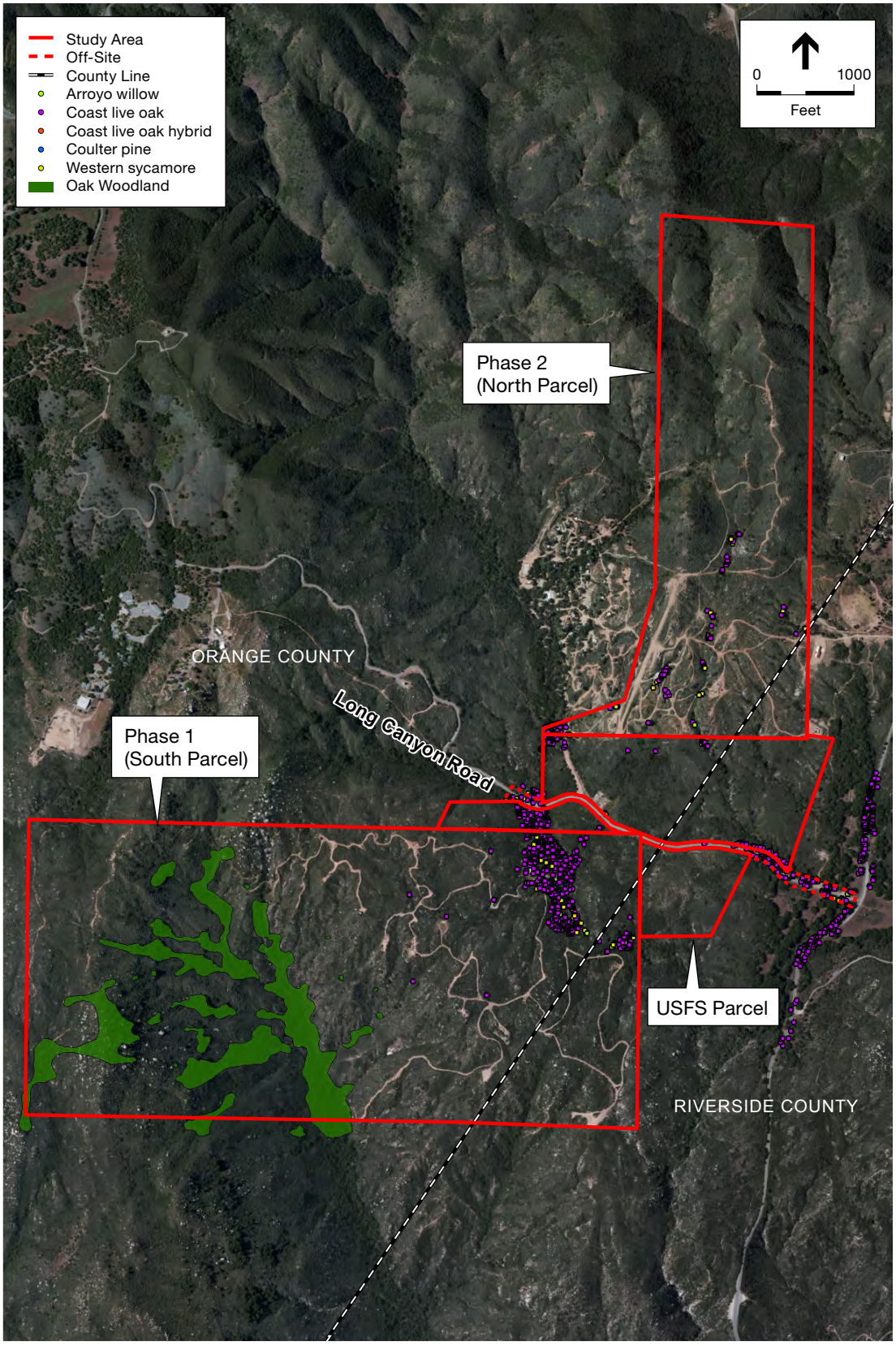
A total of approximately 3,189 trees are located within the project development area as shown in **Figure 3.4-3**. Within the project development area, there are 850 trees (including 749 coast live oaks, 93 western sycamores, 7 arroyo willows (*Salix lasiolepis*), and 1 Coulter pine (*Pinus coulteri*)).

Outside of the development area (within Orange County), there are 2,339 trees (including 2,148 coast live oaks and 191 western sycamores) within the woodlands, which are located within the 414.6 acres that are proposed for preserved open space. Within the off-site areas, which include the proposed roadway improvements to Ortega Highway and the construction of connector roadways from Long Canyon Road, there are 526 trees (including 498 coast live oaks, 25 western sycamores, and 3 arroyo willows). Additional detail is provided in the Tree Management and Preservation Plan (Dudek, 2014) located in Appendix C3 of this EIR.

Jurisdictional Wetlands and "Waters of the U.S."

An investigation of jurisdictional wetlands and "waters of the U.S." was conducted by Glenn Lukos Associates. In 2007-2008, a jurisdictional delineation was conducted over an approximately 930.6-acre study area (GLA**,** 2008). In 2013, Glenn Lukos Associates regulatory specialists re-examined the study area and updated the jurisdictional delineation to reflect current site conditions that included the proposed development area that included a 341-acre study area that contains one main drainage complex, described herein as Drainage A (Long Canyon Creek) and its tributaries (see **Figure 3.4-4**) (GLA, 2014). Drainage B occurs outside of the study area; however, one of its tributaries, Tributary B17, is within the study area. Drainage A and B are mapped as blue-line streams on the USGS topographic map Alberhill, California. A small portion of Drainage C occurs within the study area, near the intersection of Long Canyon Road and Ortega Highway, and converges within Drainage A off-site. Both Drainages A and B converge with San Juan Creek off-site, and ultimately discharge into the Pacific Ocean.

Potential USACE jurisdiction within the 341-acre study area totals approximately 1.32 acres of "waters of the U.S." (29,625 linear feet), none of which consists of jurisdictional wetlands. None of the drainages were determined to be intrastate/isolated waters outside of USACE jurisdiction. Therefore, the boundaries of all RWQCB jurisdictional "waters of the state" are equivalent to USACE jurisdiction (1.32 acres, 29,625 linear feet). Potential CDFW jurisdiction totals approximately 6.53 acres, of which 5.89 acres consist of vegetated riparian habitat, and includes all areas within USACE jurisdiction, as detailed in **Table 3.4-3**.

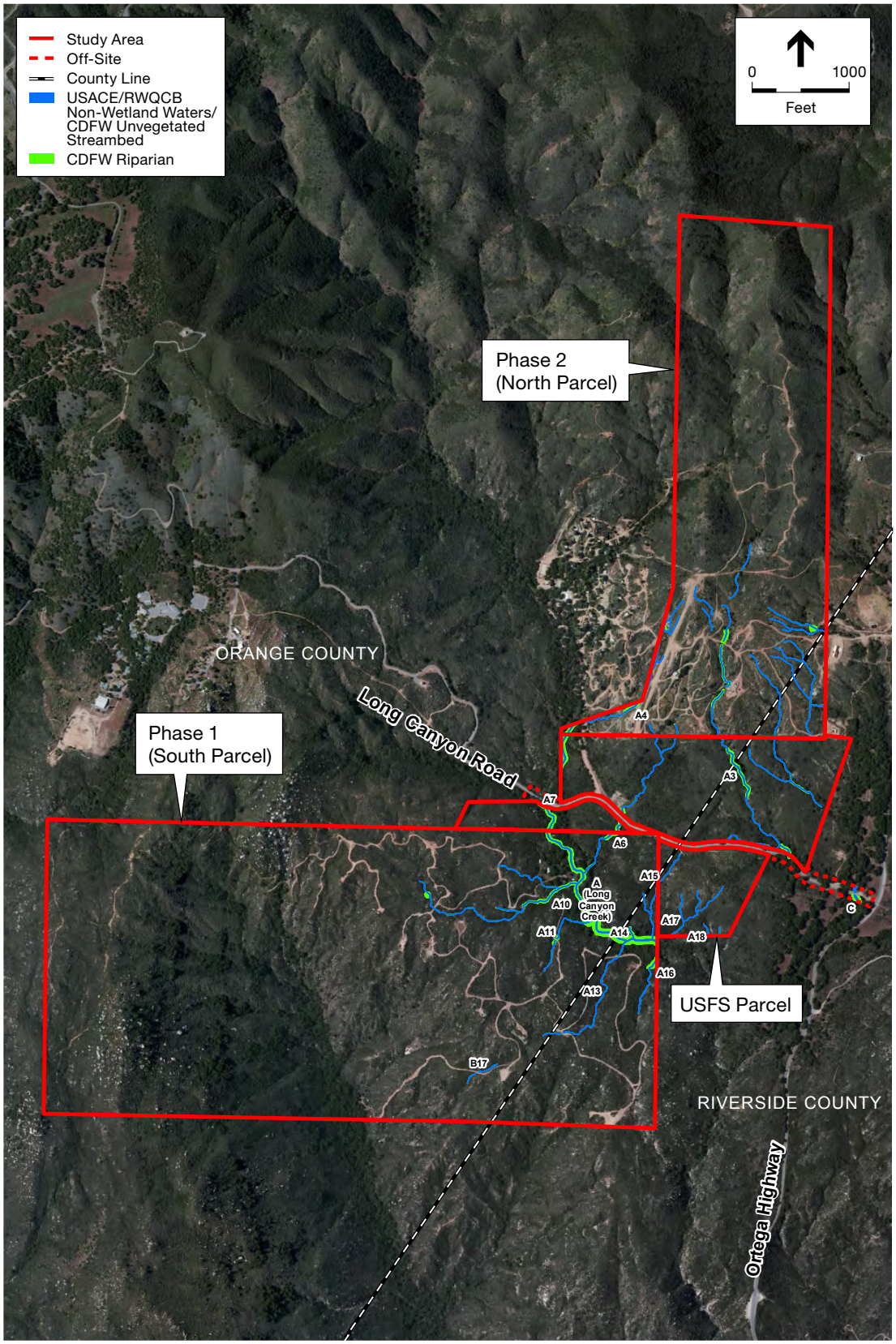


NOTE: The study area analyzed in the BRA encompasses 745 acres, which is larger than, but includes, the footprint of the proposed project because the biological resources analysis was conducted prior to the project design being finalized.

SOURCE: PCR, 2014

The Preserve at San Juan

Figure 3.4-3
Regulated Trees



NOTE: The study area analyzed in the BRA encompasses 745 acres, which is larger than, but includes, the footprint of the proposed project because the biological resources analysis was conducted prior to the project design being finalized.

SOURCE: PCR, 2014

The Preserve at San Juan

Figure 3.4-4

Jurisdictional Features

TABLE 3.4-3
JURISDICTIONAL FEATURES

Drainage Feature	USACE Non-Wetland Waters	USACE Wetland	Total USACE	CDFW Unvegetated Streambed	CDFW Riparian Habitat	Total CDFW	RWQCB	Linear Feet
A	0.45	0.00	0.45	0.00	3.51	3.51	0.45	2,916
A3	0.37	0.00	0.37	0.29	1.12	1.41	0.37	12,200
A4	0.06	0.00	0.06	0.05	0.13	0.18	0.06	2,191
A6	0.09	0.00	0.09	0.06	0.28	0.34	0.09	2,508
A7	0.01	0.00	0.01	0.00	0.05	0.05	0.01	121
A10	0.08	0.00	0.08	0.05	0.45	0.50	0.08	3,108
A11	0.02	0.00	0.02	0.02	0.04	0.06	0.02	834
A13	0.05	0.00	0.05	0.05	0.00	0.05	0.05	1,624
A14	0.00	0.00	0.00	0.00	0.04	0.04	0.00	121
A15	0.03	0.00	0.03	0.03	0.00	0.03	0.03	1,263
A16	0.03	0.00	0.03	0.02	0.15	0.17	0.03	654
A17	0.04	0.00	0.04	0.04	0.00	0.04	0.04	1,362
A18	0.01	0.00	0.01	0.01	0.00	0.01	0.01	236
B17	0.02	0.00	0.02	0.02	0.00	0.02	0.02	354
C	0.06	0.00	0.06	0.00	0.12	0.12	0.06	133
Total	**1.32**	**0.00**	**1.32**	**0.64**	**5.89**	**6.53**	**1.32**	**29,625**

SOURCE: GLA, 2014.

Western Riverside County Multiple Species Habitat Conservation Plan

This section provides a discussion of the study area's relationship to the MSHCP policies.

Location of the Study Area within the MSHCP Cores and Linkages

The study area is within Existing Core B, which consists of two large and two small blocks of Public/Quasi-Public Lands that provide the second largest habitat block in the MSHCP Area. MSHCP studies of mountain lion movement within Existing Core B indicated that it provides both live-in and linkage habitat for this mammal, which requires very large blocks of intact habitat. Existing Core B then likely also provides linkage area for other mammals such as bobcat.

Of the MSHCP Planning Species for Existing Core B, the turkey vulture and mountain quail were observed; and the following species have the potential to occur within the study area: Cooper's hawk, southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Bell's sage sparrow (*Amphispiza belli belli*), golden eagle (*Aquila chrysaetos*), downy woodpecker (*Picoides pubescens*), purple martin (*Progne subis*), mountain lion (*Puma concolor*), prostrate spineflower (*Chorizanthe procumbens*),.

Riparian/Riverine Areas and Vernal Pools

Section 6.1.2 of the MSHCP provides for the protection of Riparian/Riverine Areas and Vernal Pools within the MSHCP Plan Area. The study area supports 1.8 acres of MSHCP

Riparian/Riverine Areas that includes a portion of Long Canyon Creek (Drainage A), which is an intermittent drainage system; several ephemeral features that are tributary to Long Canyon Creek; and a small portion of Drainage C, an ephemeral drainage feature that crosses Long Canyon Road near Ortega Highway within the off-site portion of the biological resources study area. The ephemeral drainages support upland vegetation mostly dominated by chaparral with patches of coast live oak. The intermittent features support patches of coast live oak, western sycamore, and scattered willows along the banks and a rocky, mostly unvegetated streambed.

Five man-made seasonal ponds occur within the Orange County portion of the study area, and no vernal pools or other seasonal pond features occur within the Riverside County portion of the study area.

Riparian/Riverine Plant Species

A habitat assessment was conducted for species listed in Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, of the MSHCP. The results are presented in **Table 3.4-4**. One Riparian/Riverine plant species was observed in 2006 within the Orange County portion of the study area, Coulter's matilija poppy; however, none were observed during the more recent sensitive plant surveys conducted in 2012-2013. Furthermore, this species was not observed within the Riverside County portion of the study area during any surveys. Three species, San Miguel savory, Fish's milkwort, and Ocellated Humboldt lily, were not observed during focused surveys but have the potential to occur outside of the project impact footprint due to portions of the study area being inaccessible (i.e., due to dense habitat and steep terrain). However, this potential is considered low due to the dense canopies of vegetation that would limit or even eliminate understory species, and based on the fact that no edges or open areas were observed through binoculars that could support understory species. No other Riparian/Riverine plant species have the potential to occur due to the lack of suitable habitat or the location of study area outside of the species range, or based on the negative results of focused surveys.

TABLE 3.4-4
MSHCP RIPARIAN/RIVERINE PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Species	Potential to Occur within the Study Area
Coulter's matilija poppy *Romneya coulteri*	Suitable habitat occurs and this species was observed in the Orange County portion of the study area in 2006; however, none were observed during the more recent sensitive plant surveys conducted in 2012-2013. The species was not observed during the Riverside County portion of the study area during any of the surveys.
Fish's milkwort *Polygala cornuta* var. *fishiae*	This species was not observed during focused surveys; however, there remains a low potential for this species to occur within portions of the study area outside of the project impact footprint. However, this potential is considered low due to the dense canopies of vegetation that would limit or even eliminate understory species, and based on the fact that no edges or open areas were observed through binoculars that could support understory species.
Ocellated Humboldt lily *Lilium humboldtii* ssp. *ocellatum*	This species was not observed during focused surveys; however, there remains a low potential for this species to occur within portions of the study area outside of the project impact footprint. However, this potential is considered low due to the dense canopies of vegetation that would limit or even eliminate understory species, and based on the fact that no edges or open areas were observed through binoculars that could support understory species.
San Miguel savory	This species was not observed during focused surveys; however, there remains

Species	Potential to Occur within the Study Area
Satureja chandleri	a low potential for this species to occur within portions of the study area outside of the project impact footprint. However, this potential is considered low due to the dense canopies of vegetation that would limit or even eliminate understory species, and based on the fact that no edges or open areas were observed through binoculars that could support understory species.

SOURCE: PCR, 2014.

Narrow Endemic Plant Species Survey Area

The study area is within Area 9 of the MSHCP's Narrow Endemic Plant Species Survey Area; therefore, a habitat assessment was completed for many-stemmed dudleya, California Orcutt grass, spreading navarretia, San Miguel savory, Hammitt's clay-cress, and Wright's trichocoronis.

The only species with the potential to occur in the study area is San Miguel savory, which was not observed during focused surveys; however, there remains the potential for this species to onsite but outside of the project development area.

Urban/Wildlands Interface

Section 6.1.4, Guidelines Pertaining to the Urban/Wildlands Interface, presents a number of guidelines that are intended to address indirect effects associated with locating developments in proximity to a MSHCP Conservation Area. The study area is not within or adjacent to any Criteria Cells; however, it is surrounded by the open space of the Cleveland National Forest and PQP lands. Therefore, the potential for indirect impacts related to the urban edge were analyzed. These include the quantity and quality of any runoff generated by the development, night lighting, and noise-generating land uses. Project Design Features (PDFs) and best management practices (BMPs) incorporated into the proposed project to minimize these edge effects are discussed in detail below.

Regulatory Setting

Federal Endangered Species Act

The FESA provides a process for listing species as either threatened or endangered, and methods of protecting listed species. Species are listed as either endangered or threatened under Section 4 of the FESA that defines as "endangered" any plant or animal species that is in danger of extinction throughout all or a significant portion of its range and "threatened" if a species is likely to become endangered in the foreseeable future. Section 9 of the ESA prohibits "take" of listed threatened or endangered species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Harm under the definition of "Take" includes disturbance or loss of habitats used by a threatened or endangered species during any portion of its life history. Under the regulations of the FESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711) (MBTA) makes it unlawful to possess, buy, sell, purchase, barter or "take" any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. "Take" is defined as possession or destruction of migratory birds, their nests or eggs. Disturbance that causes nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend would be in violation of the MBTA.

Federal Clean Water Act

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or excavation within "waters of the U.S." and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. "Waters of the U.S." are defined by the CWA as "rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands." Wetlands are defined by the CWA as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." The permit review process entails an assessment of potential adverse impacts to USACE jurisdictional "waters of the U.S." and wetlands.

In response to the permit application, the USACE will also require conditions amounting to mitigation measures. Where a federally listed species may be affected, they will also require Section 7 consultation with the USFWS under the FESA. Through this process, potentially significant adverse impacts within the federal jurisdictional limits could be mitigated to a level that is less than significant.

The mission of the California RWQCB is to develop and enforce water quality objectives and implement plans that will best protect the beneficial uses of the state's waters, recognizing local differences in climate, topography, geology, and hydrology. Section 401 of the CWA requires that:

> "*any applicant for a federal permit for activities that involve a discharge to waters of the state, shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act*."

Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification from the RWQCB. A complete application for 401 Certification will include a detailed Water Quality Management Plan that will address the key water quality features of the project to ensure the integrity of water quality in the area during and post-construction.

Under separate authorities granted by state law (i.e., the Porter-Cologne Water Quality Control Act), a RWQCB may choose to regulate discharges of dredge or fill materials by issuing or waiving (with or without conditions) Waste Discharge Requirements (WDRs), a type of state discharge permit, instead of taking a water quality certification action. Processing of a WDR is similar to that of a Section 401 certification; however, the RWQCB has slightly more discretion to add conditions to a project under the Porter-Cologne Act than under the federal CWA.

California Endangered Species Act

The CDFW administers CESA. The State of California considers an endangered species one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. And a rare plant species is one present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are protected against take, which under the CESA is restricted to direct killing or harm of individual animals and does not apply to the loss of habitat as it does under FESA.

Fish and Game Code of California

All birds, and raptors specifically, and their nests, eggs and parts thereof are protected under Sections 3503 and 3503.5 of the Fish and Game Code California. Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) is considered a violation of this code. Additionally, Section 3513 prohibits the take or possession of any migratory non-game bird listed by the MBTA.

CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake which supports fish or wildlife resources under Sections 1600-1603 of the Fish and Game Code of California. The CDFW issues Streambed Alteration Agreements for the alteration of any of these areas. It is not legal to alter the bed or bank of a stream or lake or their natural water flow without a CDFW Streambed Alteration Agreement.

Non-Listed Species Management and Conservation Concerns

Species of Special Concern is an informal designation used by CDFW for some declining wildlife species that are not proposed for listing as threatened or endangered. This designation does not provide legal protection, but signifies that these species are recognized as declining by CDFW.

The CNPS has developed an inventory of California's special-status plant species. This inventory summarizes information on the distribution, rarity, and endangerment of California's vascular plants. The inventory is divided into four lists based on the rarity of the species. In addition, the CNPS provides an inventory of plant communities that are considered natural communities of special concern by the state and federal resource agencies, academic institutions, and various conservation groups. The determination of the level of significance of impacts on plant species and natural communities is based on the number and size of remaining occurrences as well as recognized threats.

Natural communities of special concern are those that support concentrations of special-status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Natural communities of special concern are not afforded legal protection unless they are designated critical habitat for federally listed threatened or endangered species, support formally listed species, or are jurisdictional wetland habitats.

Public Resources Code 21083.4 (Senate Bill 1334)

PRC 21083.4 sets forth requirements for oak tree protection and mitigation and defines oak trees as those trees with a minimum trunk diameter of 5 inches. Furthermore, PRC 21083.4 contains provisions for counties to mitigate impacts to oak-dominated habitats that are considered significant under CEQA and for which there is no oak preservation ordinance or regulation in place. Specifically, an Oak Tree Management Plan must be submitted as a component of the oak tree permit application and shall address site oak tree characteristics, locations, protection measures to be implemented during construction, and mitigation for those trees impacted by development activity.

Natural Community Conservation Planning Program

The Natural Community Conservation Planning Program (NCCP) Act (Sections 2800-2840 of the State Fish and Game Code), authorized the preparation of NCCPs to protect natural communities and species while allowing a reasonable amount of economic development.

The Orange County portion of the study area is within the SSNCCP; however, it is outside of the Rancho Mission Viejo planning area and, is not subject to the policies set forth in the SSNCCP.

Western Riverside County Multiple Species Habitat Conservation Plan

The western Riverside County MSHCP, adopted by the County of Riverside on June 17, 2003, serves as a HCP pursuant to the Act and pursuant to Section 10 (a)(1)(B) of the FESA. The Implementation Agreement (IA) sets forth the implementation requirements for the MSHCP as well as procedures and minimization measures related to take of habitats and species considered for conservation. Implementation of the MSHCP authorizes participating jurisdictions to "take" specified plant and wildlife species within the MSHCP Plan Area. In addition, the wildlife agencies, namely CDFW and USFWS, allow take of habitat or individual species outside of the MSHCP Conservation Area in exchange for the assembly and management of a coordinated MSHCP Conservation Area. The assembly and long-term management of the MSHCP Conservation Area is the responsibility of the Riverside County, state, and federal governments; Cities within the western portion of Riverside County; and private and public entities.

County of Orange General Plan Resources Element

Goal 1: Protect wildlife and vegetation resources and promote development that preserves these resources.

Objective 1.1: To prevent the elimination of significant wildlife and vegetation through resource inventory and management strategies.

Goal 3: Manage and utilize wisely the County's landform resources.

Policy 1: To identify and preserve the significant wildlife and vegetation habitats of the County.

3.4.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to biological resources, a project could have a significant effect on the environment if it would:

- 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 Wildlife or U.S. Fish and Wildlife Service;
- 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 Wildlife or U.S. Fish and Wildlife Service;
- 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;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

As described in Section 1.0, *Introduction*, Notice of Preparations and Initial Studies were prepared and circulated for public review in both 2013 and 2014; the following comments related to biological resource topics were received:

- Information and consultation request from wildlife agencies.
- Identification of any wildlife migration impacts.
- Field monitoring for biological resources is required for utility installation.

3.4.3 Methodology

This assessment of biological resources is based on information compiled through field reconnaissance, focused surveys, and appropriate reference materials. The study area was visited by PCR biologists on December 13, 2004, to conduct the biological constraints analysis. Formal survey work followed between March 29, 2005 and June 5, 2008 and included mapping the plant communities, conducting a habitat assessment for sensitive amphibians, conducting sensitive plant surveys, conducting fairy shrimp surveys, and assessing the potential for the study area to support other sensitive species and/or habitats, as documented in the 2008 Biological Resources Assessment (PCR, 2008). Surveys were also conducted between May 17, 2012 and May 15, 2013 to update the previous field work and conduct focused surveys for sensitive plants and fairy

shrimp and are included within this analysis. The site's jurisdictional delineation was conducted by GLA in 2007 (GLA 2008) and updated in 2013 (GLA 2013), and a tree survey was conducted by Dudek in 2008 and updated in 2014 (Dudek 2014). Overall, biologists have been onsite identifying biological resources from 2004 through 2014, and the data gathered throughout this timeline is utilized to assess the potential impacts of the proposed project on biological resources. The biological resources assessment, jurisdictional delineation, tree survey and fair shrimp surveys can all be found in Appendices C1 through C4 of this EIR.

3.4.4 Project Impacts

Impact 3.4-1: Would implementation of the proposed project 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 Wildlife or U.S. Fish and Wildlife Service.

Impacts to Special Status Plant Species

Less than Significant Impact with Implementation of Mitigation. Of the sensitive plant species listed in Table 3.4-1 one, Coulter's matilija poppy, was observed within the study area. Approximately 16 individuals were observed in one location in the northeast corner of Phase 1 (south parcel) during 2006 surveys; however, none were observed during the more recent sensitive plant surveys conducted in 2012-2013. The area in which this species was previously found was dominated by a dense layer of Spanish broom (*Spartium junceum*); thus, it is suspected that this non-native broom outcompeted the Coulter's matilija poppy and that it no longer occurs on-site.

In addition, 12 sensitive plant species have the potential to occur within the study area; which include: bottle liverwort, Payson's jewel-flower, Robinson's pepper-grass, Santiago Peak phacelia, heart-leaved pitcher sage, intermediate monardella, felt-leaved monardella, Hall's monardella, San Miguel savory, Fish's milkwort, mesa horkelia, Ocellated Humboldt lily, However, the potential location of these sensitive plant species are limited to areas outside of the project development footprint, and the probability of occurrence in these areas is considered low due to the dense canopies and lack of open areas observed that could support these sensitive plant species. Thus, the potential for impacting any of the sensitive plant species by implementation of the proposed project is low. Additionally, the project includes Project Design Features that would reduce potential impacts to sensitive plant species, which include:

- The provision of 414.6 acres or approximately 71 percent of the project site would preserve large areas of open space onsite, which would preserve biological resources within a large portion of the project site (PDF-1).
- Open space would be concentrated in the western and northern portions of the project site and the single-family residences would be clustered, which would buffer biological resources from residential uses (PDF-2).

Furthermore, Mitigation Measure MM 3.4-1 would implement Environmental Awareness Programs, which would provide biological training to identify any sensitive plant species to construction workers and would implement a Resident Environmental Awareness Program that

would provide awareness to residents of the sensitive plants. Implementation of Project Design Features PDF-1 and PDF-2 and Mitigation Measure MM 3.4-1 would reduce the low potential of impacts on sensitive plant species to a less than significant level.

Impacts to Special Status Wildlife Species

Of the sensitive wildlife species listed in **Table 3.4-2** six sensitive wildlife species (coast range newt, coast horned lizard, coastal rosy boa, northern red-diamond rattlesnake, white-tailed kite, and northern harrier) have been observed; 3 sensitive wildlife species (San Bernardino ringneck snake, San Diego mountain kingsnake, and northwestern San Diego pocket mouse) have a moderate potential to exist; and 9 sensitive wildlife species have a low potential to exist within the biological resource study area (Quino checkerspot butterfly, orange-throated whiptail, coast patch-nosed snake, golden eagle, long-eared owl, loggerhead shrike, western red bat, western mastiff bat, San Diego desert woodrat). Fairy shrimp are not anticipated to occur within the study area; however, due to the regional concern about this species, the lack of suitable habitat is described below. Additionally, the potential impacts from the proposed project to these special status wildlife species are described below.

Fairy shrimp. The study area supports suitable habitat for fairy shrimp (e.g., San Diego fairy shrimp and Riverside fairy shrimp). No fairy shrimp were observed during focused wet and dry surveys conducted in 2005-2006 (PCR, 2006; 2007), or during wet season surveys conducted in 2012-2013 for Seasonal Ponds 2 and 3 (since these were the only two ponds which inundated) (PCR, 2013).[4] In addition, at the request of the USFWS, a dry season survey was conducted in October 2013 for Seasonal Ponds 1, 4, and 5, even though these ponds did not inundate enough to initiate wet season surveys during the 2012-2013 wet season during which no special status shrimp eggs were recovered. Due to the negative results of previous focused surveys conducted, San Diego fairy shrimp and Riverside fairy shrimp are not expected to occur within the study area. As such, no impacts are expected to occur to these species (PCR, 2013).

Amphibians. The coast range newt was observed within the study area in one location within the coast live oak forest in the southern-central portion of the unnamed drainage bisecting Phase 1 (south parcel) (i.e., Drainage B). In addition, coast range newts were observed in two locations off-site within Long Canyon Creek just east of Phase 1 (north parcel) parcel boundary; however, these two observations are not within the proposed development areas. The proposed project was designed to avoid disturbances to Long Canyon Creek; however, the creek would be crossed by a road that would be developed by the project as part of the interior roadway system. The crossing would consist of an arch span bridge of concrete or steel with a natural bottom to minimize potential impacts to the creek. Drainage B would be avoided completely by the proposed project.

However, impacts to the coast range newt could occur from the construction near Long Canyon Creek that could impact approximately 1.36 acres (1.31 acre in Phase 1, 0.05 acre in Phase 2), or 934 linear feet of streambed of Long Canyon Creek. The study area supports approximately 3.51 acres, or 2,916 linear feet of streambed (i.e., CDFW jurisdiction) within Long Canyon Creek. In

[4] PCR consulted with the USFWS for guidance on whether dry season surveys would be required for Seasonal Ponds 2 and 3, which were perennially ponded. Per the recommendation of the USFWS, dry season surveys on Seasonal Ponds 2 and 3 were not recommended since they were perennially ponded due to human activities.

the context of the study area, impacts would only occur within seven percent of Long Canyon Creek, preserving 61 percent within the study area.

The coast range newt is not listed as threatened or endangered; it is a SSC species and is a covered species under the MSHCP (though this species was observed within the Orange County portion of Phase 1 (south parcel)). Impacts Long Canyon Creek within the study area are not expected to drop populations of the coast range newt below self-perpetuating levels in the region. In addition, another sensitive amphibian species, western spadefoot, has potential to occur on-site within the seasonal ponds; however, this species was not observed. The project includes Project Design Features that would reduce potential impacts to sensitive amphibian species, which include Project Design Features PDF-1 and PDF-2 (listed previously in the Special Status Plant Species discussion), and PDF-17 and PDF-20 listed below:

- Conceptual Water Quality Management Plan (WQMP) that includes best management practices (BMPs) to control predictable pollutant runoff, which would minimize pollutants in habitat for amphibians (PDF-17).
- Best management practices will be incorporated into the project to ensure that indirect impacts (i.e., edge effects) are avoided or minimized to the maximum extent possible, which would reduce potential impacts to amphibians (PDF-20).

In addition, Mitigation Measure MM 3.4-1 would implement Environmental Awareness Programs, which will provide biological training to construction workers to identify any sensitive wildlife species and implements a Resident Environmental Awareness Program that would provide awareness to residents of the sensitive wildlife species in the project area. Mitigation Measure MM 3.4-2 will implement specific BMPs during construction activities that would reduce the potential of impacts to sensitive wildlife species; and Mitigation Measure MM 3.4-3 requires a pre-construction survey and construction monitoring to avoid impacts to the coast range newt and western spadefoot. With implementation of Project Design Features described above and Mitigation Measures MM 3.4-1 through 3.4-3, impacts to the coast range newt and western spadefoot would be less than significant.

Insect species. The Quino checkerspot butterfly (QCB) may have a low potential to occur in the study area although this species is not known to occur within the area (nearest recorded occurrences are within Riverside County 4.4 miles to the east [1983] and 6.6 miles to the east-northeast [2002]) and patches of potentially suitable habitat within a matrix of predominantly unsuitable habitat reduce the likelihood of this species being found; however, there is a low potential for the study area to support QCB. The new protocol was issued on February 21, 2014 and requires focused surveys to begin during the third week of February. The majority of the project site does not have QCB potential; however, portions of the study area support open scrub and non-native grasslands that have QCB potential.

Project Design Features PDF-1, PDF-2, PDF-17, and PDF-20, which area described above; along with Mitigation Measure MM 3.4-1 that would implement environmental awareness programs, and Mitigation Measure MM 3.4-2 that would implement construction BMPs would reduce impacts to the QCB. Additionally, Mitigation Measure MM 3.4-4 requires a QCB habitat

assessment by a certified QCB biologist and coordination with the USFWS and identifies appropriate measures that would be implemented if QCB is identified on the project site to ensure that impacts to this species would be reduced to a less than significant level. Thus, with implementation of Mitigation Measures MM 3.4-1, MM 3.4-2, and MM 3.4-4 and the related Project Design Features, potential impacts to QCB would be reduced to a less than significant level.

Reptile species. The coast horned lizard was observed on Phase 1 (south parcel) and Phase 2 (north parcel), and is expected to occur throughout the study area due to the presence of suitable habitat. The coastal rosy boa and northern red-diamond rattlesnake were observed on Phase 2 (north parcel), and are also expected to occur on all parcels of the study area. The coast horned lizard and northern red-diamond rattlesnake are covered species and are adequately conserved under the MSHCP reserve design; therefore, potential impacts to these species within Riverside County are less than significant.

The coast horned lizard is a SSC and USFS Sensitive species; the coastal rosy boa is a USFS Sensitive species; and the northern red-diamond rattlesnake is a SSC species. Several additional sensitive reptile species also have the potential to occur within the study area, including the orange-throated whiptail, San Bernardino ringneck snake, San Diego mountain kingsnake, and coast patch-nosed snake. The orange-throated whiptail and San Diego mountain kingsnake are adequately conserved under the MSHCP within the Riverside County portion.

Overall, the proposed project would preserve large areas of suitable scrub, chaparral, and woodland habitats, as well as grassland habitats. Because this designated open space is located adjacent to other large regional open space areas, potential impacts to these species that would occur within the project footprint, are not expected to threaten regional populations. Project Design Features PDF-1, PDF-2, PDF-17, and PDF-20, which area described above; along with Mitigation Measure MM 3.4-1 that would implement Environmental Awareness Programs and Mitigation Measure MM 3.4-2 that would implement specific construction BMPs reducing the potential of impacts to sensitive wildlife species; and Mitigation Measure MM 3.4-3 would provide for a biological monitor on-site to relocate any species observed, which would minimize potential impacts. Thus, with implementation of Mitigation Measures MM 3.4-1 through MM 3.4-3 and the related Project Design Features, potential impacts to sensitive reptile species would be less than significant.

Bird species. Two sensitive bird species, the white-tailed kite and northern harrier, were observed foraging within the study area. Several additional species have the potential to forage including the golden eagle, long-eared owl, and loggerhead shrike. All of these species, except the long-eared owl, are adequately conserved under the MSHCP reserve design, and potential impacts related to the MSHCP are less than significant.

Within Orange County, the designated open space areas on and adjacent to the project area, would provide foraging habitat so that the project would not threaten regional populations. Direct impacts would also be avoided because species are mobile and are expected to fly away from the construction area, if present. In addition, the project includes Project Design Features PDF-1, PDF-2, PDF-17, and PDF-20, described above, that would reduce the project's potential impacts

on sensitive bird species. Furthermore, Mitigation Measure MM 3.4-3 would provide a biological monitor on-site to flush any species observed during monitoring to minimize impacts to these species, if present. Compliance with the MBTA would also ensure no impacts to nests would occur (discussed under Impact 3.4-4 below). Thus, with implementation of the Project Design Features, Mitigation Measure MM 3.4-3, and compliance with the MBTA (described below) potential impacts to sensitive bird species would be less than significant.

Mammal species. Several mammal species have a low to moderate potential to occur in the study area, including the western red bat, western mastiff bat, northwestern San Diego pocket mouse, and San Diego desert woodrat. The San Diego black-tailed jackrabbit, northwestern San Diego pocket mouse, and San Diego desert woodrat are species adequately conserved under the MSHCP reserve design. The study area is not within the Mammal Species Survey Area of the MSHCP. In addition, potential roosting habitat for western red bat and western mastiff bat would not be substantially impacted by the proposed project because the project would preserve large portions of the project area in open space. Overall, mammal species are mobile and would move away from the construction area, if present. The project also includes Project Design Features PDF-1, PDF-2, PDF-17, and PDF-20, described above, which would reduce potential impacts to sensitive mammal species.

In addition, Mitigation Measure MM 3.4-1 would implement Environmental Awareness Programs, which will provide biological training to construction workers to identify any sensitive mammal species and implements a Resident Environmental Awareness Program that would provide awareness to residents of the sensitive mammal species in the project area. Mitigation Measure MM 3.4-2 would implement specific BMPs during construction activities that would reduce the potential of impacts to sensitive mammal species; and Mitigation Measure MM 3.4-3 requires a pre-construction survey and provides for a biological monitor to relocate any sensitive species observed during monitoring. The implementation of the related Project Design Features and Mitigation Measures MM 3.4-1 through 3.4-3 would reduce potential impacts to mammal species to a less than significant level.

Indirect Impacts to Sensitive Wildlife Species

Indirect impacts may occur from project generated changes to shading of the streambed, increased sedimentation, or discharge of runoff that could change the environment offsite and indirectly impact sensitive wildlife species that are known to occur downstream of the study area within San Juan Creek. These species include the arroyo toad (FE, SSC), partially armored threespine stickleback (USFS Sensitive), and arroyo chub (SSC, USFS Sensitive).

Portions of San Juan Creek are listed as impaired on the CWA Section 303(d) list of impaired water bodies (Hunsaker & Associates, 2013). Runoff from the proposed development has the potential to change the hydrologic regime of San Juan Creek, indirectly impacting habitat for these sensitive species. The potential effects include changes in erosion and sedimentation rates, increased turbidity, and an increase in nutrients and pollutants that could occur from the residential development and vineyard operation. However, the water quality measures provided by Project Design Features would reduce these potential indirect impacts. These Project Design

Features include PDF-1, PDF-2, PDF-17, and PDF-20 (listed previously in this impact discussion), and PDF-13 and PDF-14 listed below:

- The project has been designed to mimic the hydrological characteristics of the site in its natural, undeveloped state, which would maintain habitat for these sensitive species (PDF-13).
- The project has been designed to implement Low Impact Development techniques that include conservation of natural areas, minimizing the impervious footprint, minimizing disturbances to natural drainages, and including vegetated swales for water quality purposes (PDF-14).

The Project Design Features described above would maintain hydrological conditions and treat runoff, to ensure there are no increased downstream flows and excess sediment or pollutant transport associated with the proposed project would occur. As shown in the WQMPs prepared for Phase 1 (South Parcel) and Phase 2 (North Parcel), these are designed in accordance with the South Orange County HMP per current MS4 Permit (Hunsaker, 2013). As a result, of implementation of the Project Design Features and the regulatory requirements for NPDES permitting, as further described in Section 3.9, *Hydrology and Water Quality*, the potential for a detrimental effect on water quality that could indirectly impact the arroyo toad, coast range newt, partially armored threespine stickleback, and arroyo chub would be less than significant.

Mitigation Measures

MM 3.4-1 **Environmental Awareness Programs:** The project's construction plans and grading specifications shall state that the construction contractor shall implement the following measures:

- The applicant shall prepare a *Worker Environmental Awareness Program* that shall be administered to all on-site personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. The program shall be implemented during site preconstruction and construction, and shall:

    1. Be developed by or in consultation with the County approved biologist and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all workers;
    2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, and explain the reasons for protecting these resources;
    3. Describe the temporary and permanent habitat protection measures to be implemented at the project site;
    4. Identify whom to contact if there are further comments and questions about the material discussed in the program; and

5. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

- The applicant shall implement a *Resident Environmental Awareness Program* intended to increase awareness to residents of the sensitive plants, wildlife and associated habitats that occur in the preserved open space areas. The intention of the program shall be to encourage active conservation efforts among the residents to help conserve the habitats in the preserved open space. The program shall address inadvertent impacts from the introduction of invasive plant species (including "escapees"). At a minimum, the program shall include the following components:

  1. Informational kiosks shall be constructed at entrance points to hiking trails and at various locations along the fence line that separates the project site and the open space area to inform residents and trail users on the sensitive flora and fauna that rely on the habitats found within the preserved open space and the importance of staying on trails within open space areas.

  2. The applicant shall provide residents or the Homeowners Association with a brochure which includes a list of plant species to avoid in residential landscaping to prevent the introduction of invasive plant species to the surrounding natural communities.

MM 3.4-2 **Best Management Practices for Biological Resources – Construction.** The project's construction plans and grading specifications shall state that prior to and during construction, the following shall apply:

- The project impact footprint shall be staked and fenced (e.g., with orange snow fencing, silt fencing or a material that is clearly visible) by a surveyor and the boundary shall be confirmed by a qualified biological monitor. The construction site manager shall ensure that the fencing is maintained for the duration of construction and that any required repairs are completed in a timely manner.
- Maintenance activities shall not commence 7:00 a.m. and shall be completed before dusk each day.
- If any common wildlife is encountered during maintenance activities, the common wildlife shall be allowed to leave the work area unharmed and shall be flushed or herded in a safe direction away from the work area(s).
- Qualified biological monitor(s) shall be on-site during all vegetation removal activities to flush any common wildlife within the project impact footprint away from work areas.

- Any open trenches shall be covered at the end of each work day in a manner to prevent the entrapment of wildlife, or adequately ramped to provide an animal escape route.
- If nighttime maintenance is required, lighting shall be shielded and focused downward and away from undisturbed areas and shall be limited to the minimum amount necessary to complete the maintenance activities.
- Staging or storage areas shall be located a minimum of 300 feet from any drainage.
- Any equipment or vehicles driven and/or operated within or adjacent to ponded or flowing water within any drainage shall be checked and maintained daily, to prevent leaks of materials that could be harmful to aquatic species.
- All vehicles and equipment shall be maintained in proper working condition to minimize fugitive emissions and accidental spills from motor oil, hydraulic fluid, grease, or other fluids or hazardous materials. All fuel or hazardous waste leaks, spills, or releases shall be stopped or repaired immediately with drip pans in place and cleaned up at the time of occurrence. However, no vehicle or equipment maintenance shall occur within 300 feet of any drainage. All spill material removed shall be contained and disposed of at an appropriate off-site landfill. Maintenance vehicles shall carry appropriate equipment and materials to isolate and remediate leaks or spills, such as a spill containment kit.
- Stationary equipment such as motors, pumps, or generators, located within or adjacent to ponded or flowing water within drainages shall be positioned over drip pans.
- No equipment maintenance shall be done within or adjacent to ponded or flowing water within drainages where petroleum products or other pollutants from the equipment may enter into the water.
- No waste, cement, concrete, asphalt, paint, oil, or any other substances used during maintenance activities which could be hazardous to aquatic life, or other organic or earthen material, shall be allowed to contaminate the soil and/or enter into or be placed where it may be washed by rainfall or runoff into ponded or flowing water within any drainages. Any of these materials placed where they may affect ponded or flowing water shall be removed immediately upon observation. When operations are completed, any excess non-native materials shall be removed from the work area. Only the use of native materials is expected to recontour existing baseline conditions (i.e., no non-native fill will be introduced to the open space areas).

- All litter and pollutions laws shall be followed. If trash receptacles are provided within or near the work areas they shall be wildlife-proof.
- All exposed/disturbed areas shall be stabilized to the greatest extent possible using appropriate, industry standard erosion control measures.
- No maintenance activities shall occur during active precipitation. If any precipitation is forecasted, the work area shall be secured at least one day prior so no materials enter or wash into any drainages.

MM 3.4-3 **Sensitive Wildlife.** The project's construction plans and grading specifications shall state that to avoid direct impacts to sensitive wildlife, a pre-construction survey shall be conducted within three days of proposed impacts by a qualified biologist. If it is determined by the biologist during the pre-construction survey that sensitive wildlife is present and thus may be impacted, no construction shall be allowed to occur in the immediate area until the individual(s) are relocated to an adjacent area that contains suitable habitat. A biological monitor shall be present during any ground disturbance activities within or immediately adjacent to habitat of sensitive wildlife species.

The California Department of Fish and Wildlife shall be consulted prior to relocating any sensitive wildlife species. The California Department of Fish and Wildlife may require a sensitive wildlife relocation plan be prepared and approved prior to relocating any sensitive wildlife. If required by the California Department of Fish and Wildlife, the plan shall include methods for trapping, handling and relocating all sensitive wildlife and shall identify areas that are suitable for relocation. Suitable relocation habitats shall include areas containing proper soils, host plants, and moisture conditions favorable for long-term survival of the sensitive wildlife, and relocation areas shall be sufficient in size for introducing new individuals so that overpopulation does not occur.

MM 3.4-4 **Sensitive Insects.** The project's construction plans and grading specifications shall state that as required by the updated U.S. Fish and Wildlife Service protocol, a preconstruction habitat assessment shall be conducted by a certified Quino checkerspot butterfly biologist in coordination with the U.S. Fish and Wildlife Service. A site assessment shall be conducted by a qualified Quino checkerspot butterfly biologist to determine if the project site contains areas where surveying for Quino checkerspot butterfly is recommended. Recommended Quino checkerspot butterfly survey areas include all areas that do not fall under "Excluded Areas" outlined in U.S. Fish and Wildlife Service protocol, regardless of the presence or absence of Quino checkerspot butterfly host plants or nectar sources.

If it is determined by the habitat assessment and/or coordination with the U.S. Fish and Wildlife Service that focused surveys are needed and Quino checkerspot butterfly are found within the study area, any potentially significant impacts to Quino checkerspot butterfly habitat shall be mitigated at a minimum 1:1

mitigation-to-impact ratio, subject to approval by the U.S. Fish and Wildlife Service through Section 7 consultation. Appropriate mitigation includes one or more of the following measures:

- On- and/or off-site preservation of Quino checkerspot butterfly habitat;
- On- and/or off-site creation, restoration, and/or enhancement of Quino checkerspot butterfly habitat, including the preparation of a habitat mitigation and monitoring plan; and/or
- Payment into a conservation bank or other comparable mitigation banking mechanism (e.g., in-lieu fee program, Pre-Approved Mitigation Area, etc.).

Impact 3.4-2: Would implementation of the proposed project 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 Wildlife or U.S. Fish and Wildlife Service?

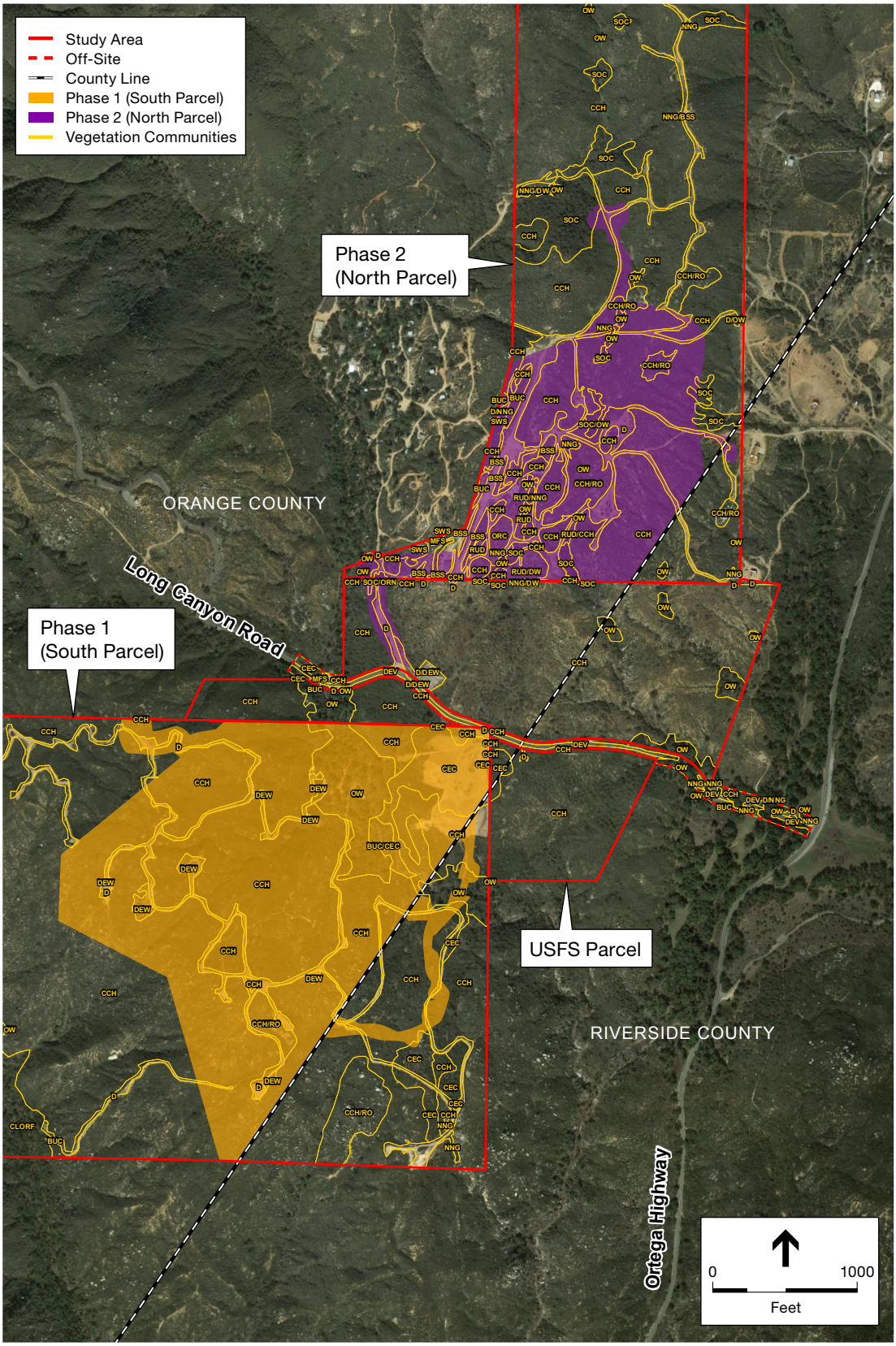
Less than Significant Impact with Implementation of Mitigation. As described above, three sensitive plant communities exist within the biological resources study area, including southern willow scrub, coast live oak woodland, and coast live oak forest. The study area supports 40.9 acres of coast live oak woodland, 4.4 acres of coast live oak forest, and 0.2 acre of southern willow scrub. As shown in **Figure 3.4-5** and detailed in **Table 3.4-5**, Phase 1 (south parcel) of the proposed project would impact 13.5 acres of coast live oak woodland; and development of Phase 2 (north parcel) would impact 0.9 acre of coast live oak woodland. Phase 2 (north parcel) would also impact less than 0.1 acre of southern willow scrub onsite. Because these communities are considered sensitive, and coast live oak woodland is protected by state law (i.e., SB 1334), impacts are considered potentially significant and mitigation measures are required.

TABLE 3.4-5
IMPACTS TO SENSITIVE PLANT COMMUNITIES

Plant Community	Existing	Phase 1 (South Parcel)	Phase 2 (North Parcel)	Avoidance
Coast Live Oak Woodland	40.9	13.5	0.9	26.5
Coast Live Oak Forest	4.4	-	-	4.4
Southern Willow Scrub	0.2	-	<0.1	0.2

SOURCE: PCR, 2014.

Project Design Features PDF-1, PDF-2, PDF-17, and PDF-20 (listed previously in the 3.4-1 discussion) would reduce impacts to these sensitive plant communities. In addition, Mitigation Measure MM 3.4-5, which would implement a Tree Management and Preservation Plan to reduce impacts on coast live oak woodland and coast live oak forest, and would mitigate impacts at a at a minimum ratio of 2:1 for southern willow scrub plant communities, which would be implemented per direction of CDFW to ensure that impacts are less than significant. Impacts related to wetlands and riparian areas are described under impact discussions 3.4-3 and 3.4-4, below.



NOTE: The study area analyzed in the BRA encompasses 745 acres, which is larger than, but includes, the footprint of the proposed project because the biological resources analysis was conducted prior to the project design being finalized.

SOURCE: PCR, 2014

The Preserve at San Juan

Figure 3.4-5

Impacts to Plant Communities

Mitigation Measure

MM 3.4-5 **Sensitive Plant Communities.** Measures to off-set impacts to coast live oak woodland and coast live oak forest shall include one (or a combination) of the following measures (which are detailed in the Tree Management and Preservation Plan for the project (see Appendix C3 of this EIR):

- Preservation of the 26.5 acres of preserved coast live oak woodland and 4.4 acres of coast live oak forest in perpetuity under a conservation easement, deed restriction, or other appropriate mechanism.
- Individual coast live oak trees within fuel modification zones, off-site impact areas, and temporary impact areas shall be protected and preserved in-place, and coast live oak trees located within the fuel modification zones that require pruning shall comply with Orange County Fire Authority requirements. Trees shall be pruned by a qualified arborist with experience specializing in the management and care of this tree species in consultation with the County Biological Resources Monitor and in accordance with the guidelines published by the National Arborist Association. In no case, shall more than 20 percent of the tree canopy of any oak tree be removed.
- The applicant shall plant trees, seedlings, and onsite-collected acorns within the landscaped portion of the proposed development as well as within the onsite oak woodlands to be preserved as open space. Trees shall be replaced at a minimum of 3:1 replacement ratio, with the possibility of up to 12:1 should all acorns/seedlings survive. All trees and seedlings shall be from a local source indigenous to the immediate area.
- Prior to the issuance of any grading permits, the applicant shall obtain the approval of a tree preservation plan for the project by the Manager of OC Planning. The Manager of OC Parks is to be consulted if the plan involves any off-site tree mitigation at an OC Parks facility.
- A five-year monitoring program shall be prepared that includes performance standards and criteria for evaluating success.

Impacts to southern willow scrub shall be mitigated at a minimum ratio of 2:1, as directed by the California Department of Fish and Wildlife, and include one, or a combination of, the following:

- Onsite creation, enhancement, or restoration;
- Offsite creation, enhancement, or restoration;
- Offsite acquisition and preservation;
- Purchase of credits at an agency-approved mitigation bank; and/or
- Payment into an in-lieu fee agreement.

A monitoring plan shall accompany the creation, restoration, and/or enhancement of sensitive plan communities. The plan shall focus on the provision of equivalent habitats within disturbed habitat areas of the study area and/or offsite (e.g., this may include, but is not limited to, removal of non-native and/or invasive species; salvage/dispersal of native duff and seed bank; transplantation, seeding, and/or planting/staking). In addition, the plan shall provide details as to the implementation of the plan, maintenance, and future monitoring to ensure success.

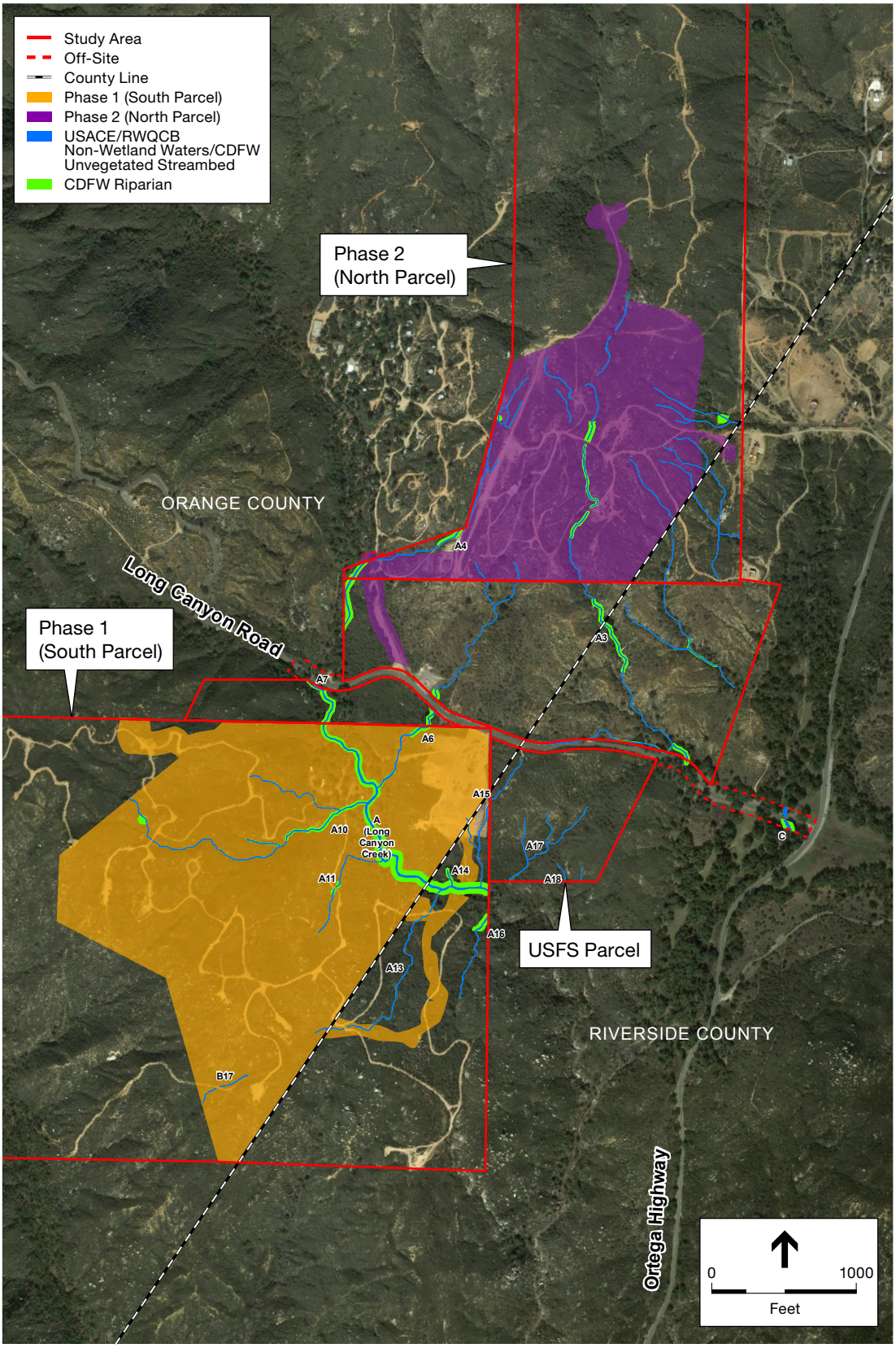
Impact 3.4-3: Would implementation of the proposed project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact with Implementation of Mitigation. The design of the proposed project would avoid the large majority of Drainage A (Long Canyon Creek) and completely avoid Drainage B). However, portions of Long Canyon Creek could be impacted by installation of a road crossing over Long Canyon Creek in the northern portion of Phase 1 (south parcel) that would consist of an arch span bridge to avoid creek and creek banks area. However, small areas of potential USACE, CDFW, and RWQCB jurisdiction (shown on **Figure 3.4-6**) could be impacted with development of the project. Development of Phase 1 (south parcel) could result in impacts to 0.44 acre (8,987 linear feet) of potential USACE and RWQCB jurisdiction, none of which consists of jurisdictional wetlands, and 2.57 acres of CDFW jurisdiction, of which 2.40 acres consist of vegetated riparian habitat, as shown in **Table 3.4-6**.

TABLE 3.4-6
IMPACTS TO JURISDICTIONAL FEATURES - PHASE 1 (SOUTH PARCEL)

Drainage Feature	USACE Non-Wetland Waters	Total USACE	CDFW Unvegetated Streambed	CDFW Riparian Habitat	Total CDFW	RWQCB	Linear Feet
A	0.13	0.13	0.00	1.31	1.31	0.13	860
A3	0.02	0.02	0.01	0.13	0.14	0.02	897
A6	0.05	0.05	0.02	0.28	0.30	0.05	872
A7	0.01	0.01	0.00	0.05	0.05	0.01	121
A10	0.08	0.08	0.05	0.44	0.49	0.08	3,097
A11	0.02	0.02	0.02	0.04	0.06	0.02	782
A13	0.03	0.03	0.03	0.00	0.03	0.03	946
A14	0.002	0.002	0.00	0.03	0.03	0.002	73
A15	0.02	0.02	0.02	0.00	0.02	0.02	856
B17	0.02	0.02	0.02	0.00	0.02	0.02	352
C	0.06	0.06	0.00	0.12	0.12	0.06	131
Total	**0.44**	**0.44**	**0.17**	**2.40**	**2.57**	**0.44**	**8,987**

SOURCE: GLA, 2014.



NOTE: The study area analyzed in the BRA encompasses 745 acres, which is larger than, but includes, the footprint of the proposed project because the biological resources analysis was conducted prior to the project design being finalized.

SOURCE: PCR, 2014

The Preserve at San Juan

Figure 3.4-6

Impacts to Jurisdictional Features

Development of Phase 2 (north parcel) could result in permanent impacts to 0.25 acre (7,846 linear feet) of potential USACE and RWQCB jurisdiction, none of which consists of jurisdictional wetlands, and 0.74 acre of CDFW jurisdiction, of which 0.53 acre consists of vegetated riparian habitat (see **Table 3.4-7**).

TABLE 3.4-7
IMPACTS TO JURISDICTIONAL FEATURES – PHASE 2 (NORTH PARCEL)

Drainage Feature	USACE Non-Wetland Waters	USACE Wetland	Total USACE	CDFW Unvegetated Streambed	CDFW Riparian Habitat	Total CDFW	RWQCB	Linear Feet
A	0.01	0.00	0.01	0.00	0.05	0.05	0.01	74
A3	0.17	0.00	0.17	0.15	0.46	0.61	0.17	5,256
A4	0.05	0.00	0.05	0.04	0.02	0.06	0.05	1,808
A6	0.02	0.00	0.02	0.02	0.00	0.02	0.02	708
Total	**0.25**	**0.00**	**0.25**	**0.21**	**0.53**	**0.74**	**0.25**	**7,846**

SOURCE: GLA, 2013; GLA, 2014.

However, the project includes Project Design Features that would reduce project impacts on jurisdictional resources. As listed previously in the Impact 4.4-1 discussion, Project Design Feature PDF-13 would provide a design to mimics the hydrological characteristics of the site in its natural, undeveloped state; Project Design Feature PDF-14 includes Low Impact Development techniques that minimize disturbances to natural drainages ; and Project Design Feature PDF-17 that provides a WQMP that includes BMPs to control pollutant runoff, which would reduce potential impacts on jurisdictional resources.

In addition, implementation of Mitigation Measure MM 3.4-6 would mitigate riparian/riverine habitat at a minimum ratio of 1:1 for unvegetated/upland areas and 2:1 for areas supporting riparian vegetation and would provide monitoring for a 3-year period to ensure success. Implementation of the Project Design Features and Mitigation Measure MM 3.4-6 would reduce impacts to jurisdictional features to a less than significant level.

Mitigation Measure

MM 3.4-6 **Jurisdictional Waters.** The project's construction plans and grading specifications shall state that the applicant shall provide on- and/or off-site replacement and/or enhancement of existing U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife jurisdictional waters and wetlands. Riparian/riverine habitat shall be mitigated at a minimum ratio of 1:1 for unvegetated/upland areas and 2:1 for areas supporting riparian vegetation. Impacts to jurisdictional resources may be compensated through payment into an in-lieu fee program or approved mitigation bank through coordination with the U.S. Army Corps of Engineers.

If creation, restoration, and/or enhancement is to occur on-site and/or off-site, a mitigation and monitoring plan shall be prepared and subject to the approval of these regulating agencies. The plan shall describe the location of mitigation and provide details as to the implementation of the plan, success criteria, maintenance, and monitoring for a three-year period following construction.

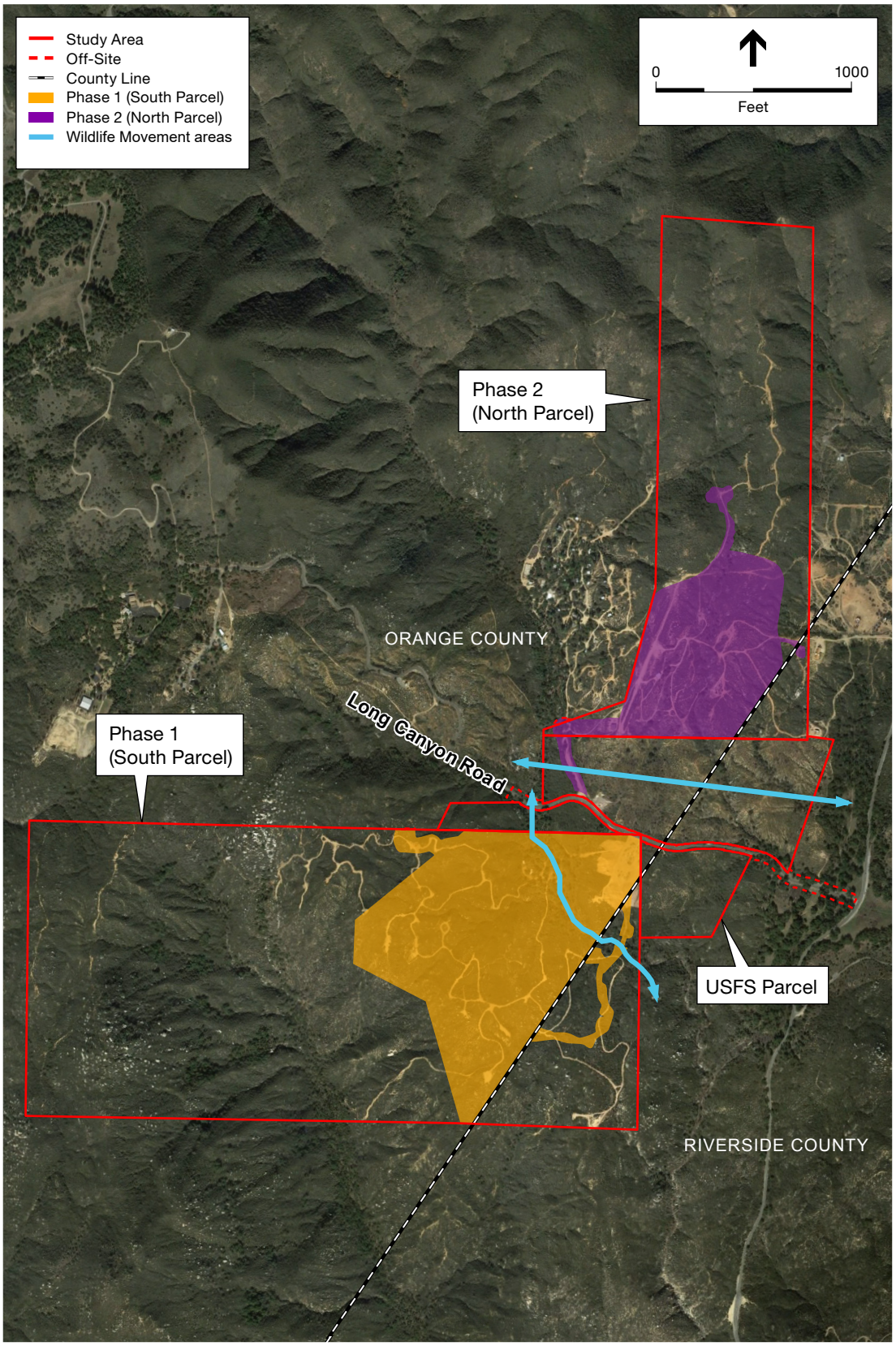
Impact 3.4-4: Would implementation of the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact with Implementation of Mitigation. The study area has the potential to support nesting birds protected under the MBTA. Nesting activity typically occurs from January 15 to August 31. Disturbing or destroying active nests is a violation of the MBTA. In addition, nests and eggs are protected by the state under Fish and Game Code Section 3503. The removal of vegetation during the breeding season is considered a potentially significant impact. Mitigation Measure MM 3.4-7, which requires nesting bird surveys and avoidance of active nests, would reduce this impact to a less than significant level.

Wildlife currently moves freely throughout the undeveloped study area via existing open spaces and travel routes that include drainages (e.g., Long Canyon Creek, Drainage B), ridgelines, trails, and dirt roads. Although implementation of the project may somewhat deter movement temporarily due to construction activities, and permanently away from the developed portions of the project site, wildlife movement would not be substantially inhibited because 414.6 acres (71 percent) of the project area that is located adjacent to existing vast regional open space areas would be preserved as open space. This includes two major drainages within the study area, Long Canyon Creek and Drainage B, which would facilitate regional wildlife movement through the area.

In addition, the proposed project clusters development into two areas (Project Design Features PDF-1 and PDF-2) (listed previously in the 3.4-1 discussion) that would preserve wildlife movement areas between the Phase 1 (south parcel) and Phase 2 (north parcel) and within the Phase 1 (south parcel), as shown in **Figure 3.4-7**. The wildlife movement area to the south of Phase 2 (north parcel) is comprised mostly of chamise chaparral, with some sparse patches of coast live oak woodland, and parallels Long Canyon Road. The wildlife movement area through the Phase 1 (south parcel) is along Long Canyon Creek and comprised mostly of coast live oak woodland with some patches of chaparral.

The wildlife movement areas between, through and around the project development areas would continue to facilitate wildlife movement. Mitigation Measures MM 3.4-1 (construction best management practices (BMPs)) and MM 3.4-2 (Environmental Awareness Program) would be incorporated along project roadways to provide wildlife crossing signage, low speed limits, and homeowner education, to minimize wildlife mortality by vehicular impacts. Thus, with



NOTE: The study area analyzed in the BRA encompasses 745 acres, which is larger than, but includes, the footprint of the proposed project because the biological resources analysis was conducted prior to the project design being finalized.

SOURCE: PCR, 2014

The Preserve at San Juan

Figure 3.4-7

Wildlife Movement

implementation of Project Design Features PDF-1 and PDF-2, and incorporation Mitigation Measures MM 3.4-1 and MM 3.4-2 impacts to wildlife movement would be less than significant.

Mitigation Measures

Mitigation Measures MM 3.4-1 and MM 3.4-2 (*Provided previously under Impact 3.4-1*)

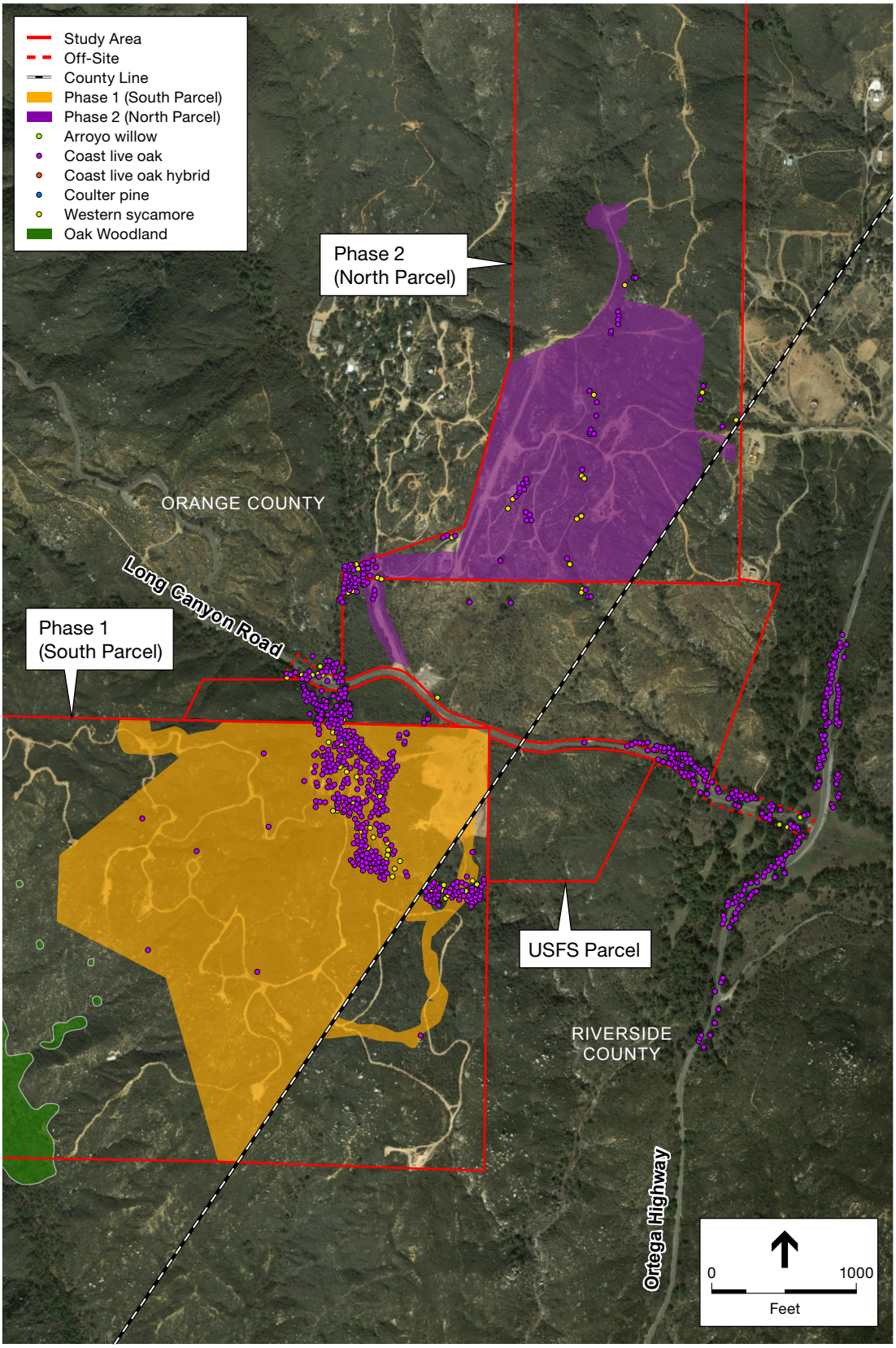
MM 3.4-7 **Nesting Bird Surveys:** The project's construction plans and grading specifications shall state that all vegetation clearing for construction and fuel modification shall occur outside of the breeding bird season (fall and winter), between September 1 and February 14 to reduce the potential to impact an active nest. If clearing and/or grading activities cannot be avoided during the breeding season, all suitable habitats shall be thoroughly surveyed for the presence of nesting birds by a qualified biologist prior to and initial ground disturbing activities. Suitable nesting habitat on the project site includes grassland, scrub, chaparral, and woodland communities. If any active nests are detected, the area shall be flagged, along with a 300-foot buffer for passerine species or 500 feet for raptors (or appropriate buffer as determined by the monitoring biologist), and shall be avoided until the nesting cycle is complete or it is determined by the biological monitor that the chicks have fledged the nest and the nest is no longer active.

Impact 3.4-5: Would implementation of the proposed project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant Impact with Implementation of Mitigation. Oak trees in unincorporated portions of Orange County are subject to management guidelines outlined in PRC 21083.4 (Senate Bill 1334, as adopted). In addition to PRC 21083.4, oak trees within Riverside County are subject to Riverside County Oak Tree Management Guidelines. Approximately 2,891 trees (90.7 percent) within Orange County and 397 trees (75.5 percent) within Riverside County that consist primarily of coast live oaks, would be avoided by the design of the proposed project. However, the project would potentially impact trees that are shown in **Figure 3.4-8**.

A maximum of 368 trees would be impacted by Phase 1 (south parcel) this includes direct impacts to 123 trees (including 109 coast live oaks and 14 western sycamores) and indirect impacts to 116 trees (including 103 coast live oaks and 13 western sycamores) within Orange County, as well as direct impacts to less than 126 trees (118 coast live oaks and 8 western sycamores) and indirect impacts to three coast live oaks within Riverside County along a roadway related to Phase 1 (south parcel) development.

A total of 59 trees would be impacted by Phase 2 (north parcel) (all within Orange County). This includes direct impacts to 48 trees (including 37 coast live oak, 10 western sycamore, and one arroyo willow) and indirect impacts to 11 trees (including six coast live oak, one western



NOTE: The study area analyzed in the BRA encompasses 745 acres, which is larger than, but includes, the footprint of the proposed project because the biological resources analysis was conducted prior to the project design being finalized.

SOURCE: PCR, 2014

The Preserve at San Juan

Figure 3.4-8

Impacts to Regulated Trees

sycamore and four arroyo willows). However, implementation Project Design Features would reduce project impacts on regulated trees. As described above, PDF-1 provides for preservation of large areas of open space onsite, which would preserve biological resources; in addition, the following two Project Design Features would also reduce potential impacts to tree policies:

- In accordance with the Tree Management Preservation Plan, oak tree relocations will be within the project site, and monitoring will be performed for a period of seven years. Oak trees will be maintained by the Homeowners Association as part of the project's covenants, conditions and restrictions (CR&Rs) (PDF-5).
- Protection measures for oak trees include fencing and protection of oak trees adjacent to construction areas. Retaining walls will be used to protect oaks proposed for preservation from surrounding cut and fill and any retaining walls will be placed outside of the root zone of the oak tree to be preserved (PDF-22).

In addition, as described above, Mitigation Measure MM 3.4-5 would replace any trees that would be impacted by the project. Thus, with implementation of the Project Design Features described above and Mitigation Measure MM 3.4-5, potential impacts related to conflict with oak tree regulations would be reduced to a less than significant level.

Mitigation Measure

Mitigation Measure MM 3.4-5 (*Provided previously under Impact 3.4-2*)

Impact 3.4-6: Could implementation of the proposed project conflict with 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 Implementation of Mitigation.

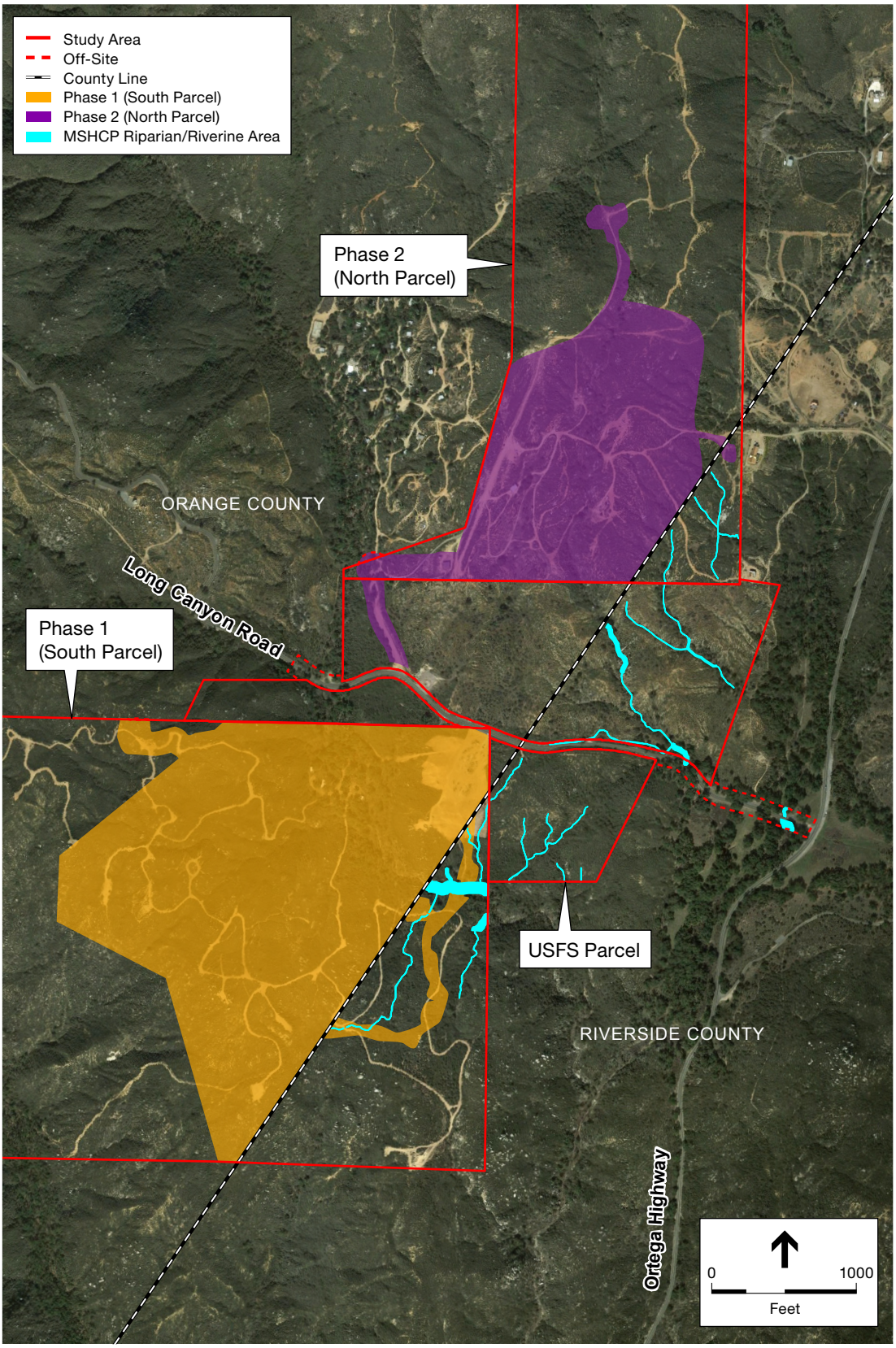
Criteria Cells

Approximately 109.6 acres of the study area (7.7 acres within Phase 2 (north parcel), 48.0 acres within Phase 1 (south parcel), and 4.7 acres off-site are within Riverside County and the Elsinore Area Plan of the MSHCP; however, the study area does not fall within a Criteria Cell. Therefore, the proposed project is not required to provide additional conservation pertaining to Criteria Cells.

In addition, none of the approximately 49.2 acres of PQP lands would be impacted, and impacts related to Criteria Cells and PQP lands would not occur from implementation of the proposed project.

Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (MSHCP Section 6.1.2)

The study area includes 1.8 acres of MSHCP Riparian/Riverine and impacts would occur to 0.9 acre as shown in **Figure 3.4-9**. Mitigation Measure MM 3.4-8 would require a Determination of Biologically Equivalent or Superior Preservation (DBESP) and implementation of mitigation at a minimum ratio of 1:1 for unvegetated/upland areas and 2:1 for areas supporting riparian vegetation, which would reduce impacts to Riparian/Riverine areas to a less than significant level.



NOTE: The study area analyzed in the BRA encompasses 745 acres, which is larger than, but includes, the footprint of the proposed project because the biological resources analysis was conducted prior to the project design being finalized.

SOURCE: PCR, 2014

The Preserve at San Juan

Figure 3.4-9

Impacts to MSCHP Riparian/Riverine Areas

The Riverside County portions of the study area do not support vernal pools. Although a series of ponds occurs in the southwest portion of Phase 2 (north parcel), these features occur within Orange County and are not subject to the MSHCP policies. Protocol surveys for fairy shrimp conducted within these ponds and were negative.

Riparian/Riverine plant species with the potential to occur within the study area include Coulter's matilija poppy, Fish's milkwort, Ocellated Humboldt lily, and San Miguel savory. Coulter's matilija poppy was previously observed in the Orange County portion of the study area in 2006; however, none were observed during the more recent sensitive plant surveys conducted in 2012-2013. Furthermore, Coulter's matilija poppy was not observed in the Riverside County portion of the study area during any surveys; therefore, no impacts would occur to this species. Fish's milkwort, Ocellated Humboldt lily, and San Miguel savory were not observed within the study area; however, portions of the study area were inaccessible during focused surveys (i.e., due to dense habitat and steep terrain), there remains a low potential for the following species to occur within portions of the study area outside of the project development area.

However, this potential is considered low due to the dense canopies of vegetation that would limit or even eliminate understory species, and based on the fact that no edges or open areas were observed through binoculars that could support understory species. Because these species, if present, would not be impacted by the proposed project, impacts would be less than significant.

One Riparian/Riverine wildlife species has the potential to occur, the American peregrine falcon. This species is not expected to breed within the study area due to the lack of suitable habitat; however, may forage in the area. Due to the preservation of 71 percent of the project area in open space (Project Design Feature PDF-1) and the proposed residential development would be clustered toward Long Canyon Road (Project Design Feature PDF-2), foraging habitat would be preserved and potential impacts to the American peregrine falcon would be less than significant.

Protection of Narrow Endemic Plant Species (MCHSP Section 6.1.3)

As described in Section 3.9.4, Narrow Endemic Plant Species Survey Area, the study area is within Area 9 of the MSHCP's Narrow Endemic Plant Species Survey Area and a habitat assessment was conducted for many-stemmed dudleya, California Orcutt grass, spreading navarretia, San Miguel savory, Hammitt's clay-cress, and Wright's trichocoronis. Of these species, San Miguel savory has the potential to occur within the study area. Although focused surveys were conducted for this species, due to portions of the study area being inaccessible because of dense habitat and steep terrain, there remains a low potential for the following species to occur within portions of the study area outside of the project footprint. However, this potential is considered low due to the dense canopies of vegetation that would limit or even eliminate understory species, and based on the fact that no edges or open areas were observed through binoculars that could support understory species. If this species were present, it would not be impacted by the proposed project, and impacts would be less than significant.

Additional Survey Needs and Procedures Required by the MSHCP (MSHCP Section 6.3.2)

The study area is not within the Criteria Area Species, Amphibian Species, Burrowing Owl, or Mammal Species Survey Areas; therefore, surveys are not required and the proposed project is considered consistent with these portions of Section 6.3.2 of MSHCP, Additional Survey Needs

and Procedures. Therefore, impacts related to Section 6.3.2 of the MSHCP would be less than significant.

Guidelines Pertaining to the Urban/Wildlands Interface (MSHCP Section 6.1.4)

The guidelines presented in Section 6.1.4, Guidelines Pertaining to the Urban/Wildlands Interface, of the MSHCP are intended to address indirect effects associated with locating development in proximity to the MSHCP Conservation Area. Development located in proximity to the MSHCP Conservation Area may result in edge effects that would adversely affect biological resources within the Conservation Area. Indirect impacts are considered to be those impacts associated with the project that involve alteration of the existing habitat and an increase in human population within the study area. These impacts are commonly referred to as "edge effects" and may result in changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to the study area. Indirect impacts include the effects of increases in ambient levels of sensory stimuli (e.g., noise and light), unnatural predators (e.g., domestic cats and other non-native animals), competitors (e.g., exotic plants and non-native animals), and trampling and unauthorized recreational use due to the increase in human population. Other permanent indirect effects may occur that are related to water quality and storm water management, including trash/debris, toxic materials, and dust.

Indirect effects resulting from the proposed project may occur within the MSHCP Conservation Area if the following proposed project design features are not implemented. The following Project Design Features would provide consistency with Section 6.1.4, *Guidelines Pertaining to the Urban/Wildlands Interface*, of the MSHCP:

- The project would comply with all applicable water quality regulations, including obtaining a CWA Section 401 Water Quality Certification and complying with those conditions established by the San Diego RWQCB. A WQMP has been prepared that delineates the planned use of infiltration and biotreatment BMPs (i.e., vegetated bioswales and infiltration basins) to treat storm water runoff, the implementation of applicable BMPs during construction activities, and the proper maintenance of these BMPs to ensure adequate long-term treatment of water before entering into any stream course. The BMPs would be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant material, and would control potential vectors or other elements that might degrade or harm biological or aquatic resources to the maximum extent possible (PDF-17).
- Toxic sources from the proposed project would be limited to those commonly associated with residential and vineyard uses, such as bacteria, nutrients, sediments, trash and debris, oxygen demanding substances, metals, organic compounds, and oil and grease. In order to mitigate the potential effects of these residential toxics, the project would incorporate BMPs (e.g., vegetated bioswales and infiltration basins), as required in association with compliance with the CWA Section 401 Water Quality Certification, County of Orange, and/or County of Riverside in order to reduce the level of toxins introduced into the drainage system and the surrounding areas. Construction of the proposed project would incorporate erosion control measures (i.e., sand bags and/or straw

wattles) around the perimeter of the development area to ensure all water leaving the site is filtered and an increase in siltation does not occur (PDF-13, PDF-14, and PDF-17).

- Night lighting within the proposed development that is adjacent to the MSHCP Conservation Area or wildlife corridors would be directed away from the MSHCP Conservation Area or wildlife movement areas. In addition, shielding shall be incorporated into the project design, as appropriate, in order to ensure that ambient lighting within an MSHCP Conservation Area or wildlife movement areas is not increased (PDF-20).
- The landscape plans for the proposed project would avoid the use of invasive species for the portions of the development areas adjacent to the MSHCP Conservation Area (PDF-4). Invasive plants that should be avoided are included in Table 6-2 of the MSHCP, *Plants That Should Be Avoided Adjacent to the MSHCP Conservation Area*. The use of invasive plant species is not included in the landscape plans for the project (PDF-4).

In addition, because the proposed project would not result in substantial noise levels, as described in Section 3.11, Noise, wildlife within an MSHCP Conservation Area would not be impacted by noise from the project. Short-term construction-related noise impacts would be reduced by the implementation of Mitigation Measures MM 3.11-1 through 3.11-3, as listed in Section 3.11, *Noise*, and would be near the MSHCP area for a limited period of time, which would not result in impacts related to guidelines for the interface with wildlands.

Furthermore, in order to minimize indirect effects to wildlife and other resources being protected in an MSHCP Conservation Area from unauthorized public access, domestic animal predation, and illegal trespass or dumping, the proposed project would incorporate physical barriers including native landscaping, rocks/boulders, fencing, signage, and other appropriate barrier mechanisms, which are described in Section 2.0, *Project Description*.

Mitigation Measure

MM 3.4-8 **Compliance with Section 6.1.2 of the MSHCP – Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools.** In accordance with Section 6.1.2 of the MSHCP, a Determination of Biologically Equivalent or Superior Preservation shall be prepared and submitted to the Environmental Programs Division. The Determination of Biologically Equivalent or Superior Preservation shall include an analysis of alternatives that demonstrates efforts that first avoid direct and indirect effects to MSHCP Riparian/Riverine habitat; if avoidance is not feasible, the Determination of Biologically Equivalent or Superior Preservation shall include alternatives that would minimize potential effects. If an avoidance alternative is selected, the project shall ensure the long-term conservation of the avoided Riparian/Riverine habitat through the use of deed restrictions, conservation easements, or other appropriate mechanisms.

If an avoidance alternative is not feasible, the Determination of Biologically Equivalent or Superior Preservation shall include measures to ensure the replacement of any lost functions and values of Riparian/Riverine habitat.

Riparian/Riverine habitat shall be mitigated at a minimum ratio of 1:1 for unvegetated/upland areas and 2:1 for areas supporting riparian vegetation. Measures shall include one, or a combination of, the following:

- On-site creation, enhancement, or restoration;
- Off-site creation, enhancement, or restoration;
- Off-site acquisition and preservation;
- Purchase of credits at an agency-approved mitigation bank; and/or
- Payment into an in-lieu fee agreement.

3.4.5 Cumulative Impacts

The geographic scope for cumulative impacts analysis for biological resources includes the southeastern portion of Orange County and the adjacent southwestern portion of Riverside County that includes the mountainous and topographic open space and habitat, which is similar to that of the project site and adjacent areas.

As described above, the proposed project includes preservation of 414.6-acres of open space, which contains various areas of chaparral and Oak tree habitat. In addition, the proposed project would be required to implement mitigation measures that would mitigate lost habitat to ratios that include: 1:1 for Quino checkerspot butterfly, between 3:1 to 12:1 for oak woodlands, 2:1 for southern willow scrub, 1:1 for riparian/riverine habitat, 2:1 for supporting riparian vegetation. Monitoring would also be required to ensure success of this habitat. With implementation of these mitigation measures habitat areas would not be impacted, and the project's provision of large areas of habitat, would provide that the proposed project would not result in an adverse impact related to biological resources that could combine with other potential projects to be cumulatively considerable. Conversely, the project could provide a cumulative long-term benefit to the region by preserving 414.6 acres of open space adjacent to the Cleveland National Forest and its biological resources.

As stated previously, the Orange County portion of the study area is within the SSNCCP; however, is outside of the Rancho Mission Viejo planning area and, therefore, not subject to the policies set forth in the SSNCCP. Therefore, the geographic scope for cumulative impacts in the Orange County portion of the study area is within a five-mile radius of the project site. Because the Western Riverside County MSHCP is a conservation plan designed to protect sensitive plant and animal species and wildlife corridors, compliance with the MSHCP would ensure cumulative biological resource impacts within the MSHCP plan area would be less than significant.

3.5 Cultural Resources

This chapter addresses the potential impacts of the proposed project to cultural resources in the project vicinity in accordance with the CEQA Statute and *CEQA Guidelines*. Cultural resources include prehistoric and historic sites, structures, districts, places, and landscapes, or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious or any other reason. Under CEQA, paleontological resources, although not associated with past human activity, are grouped within cultural resources. For the purposes of this analysis, cultural resources may be categorized into the following groups: archaeological resources, historic resources (including architectural/engineering resources), contemporary Native American resources, human remains, and paleontological resources.

Archaeological resources are places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources may be either prehistoric-era (before European contact) or historic-era (after European contact). The majority of such places in California are associated with either Native American or Euro-American occupation of the area. The most frequently encountered prehistoric or historic Native American archaeological sites are village settlements with residential areas and sometimes cemeteries; temporary camps where food and raw materials were collected; smaller, briefly occupied sites where tools were manufactured or repaired; and special-use areas like caves, rock shelters, and rock art sites. Historic-era archaeological sites may include foundations or features such as privies, corrals, and trash dumps.

Historic resources include standing structures, infrastructure, and landscapes of historic or aesthetic significance that are generally 50 years of age or older. In California, historic resources considered for protection tend to focus on architectural sites dating from the Spanish Period (1529-1822) through World War II (WWII).

Contemporary Native American resources, also called ethnographic resources, can include archaeological resources, rock art, and the prominent topographical areas, features, habitats, plants, animals, and minerals that contemporary Native Americans value and consider essential for the preservation of their traditional values. These locations are sometimes hard to define and traditional culture often prohibits Native Americans from sharing these locations with the public.

Paleontology is a branch of geology that studies the life forms of the past, especially prehistoric life forms, through the study of plant and animal fossils. Paleontological resources represent a limited, non-renewable, and impact-sensitive scientific and educational resource. As defined in this section, paleontological resources are the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints from a previous geologic period. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations) where they were originally buried. Paleontological resources include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities.

3.5.1 Environmental Setting

The following section describes the cultural resources environmental setting, which was identified through record searches and site surveys that were conducted for the proposed project.

Archival Research

Records searches of the project site were conducted on April 17, 2013 and May 1, 2013 at the South Central Coastal Information Center (SCCIC) housed at California State University, Fullerton, and the Eastern Information Center (EIC) housed at University of California, Riverside. The records searches included a review of: all recorded archaeological sites and cultural resource reports within a one-mile radius of the project site; California Points of Historical Interest; California Historical Landmarks; the California Register of Historical. Resources (CRHR); the National Register of Historic Places (NRHP); and the California State Historic Resources Inventory listings.

Previous Studies: The records searches indicate that 28 cultural resources studies have been previously conducted within a one-mile radius of the project site. Of these 28 previous studies, three include approximately 15 percent of the project site. In addition, a cultural resources study for the entire project site was prepared in 2005- 2008 (Underbrink and O'Neil, 2008), which states that dense vegetation and steep terrain of the project site prohibited the use of fixed interval transects. However, roads, creek beds, grassy flats, and ridgelines were surveyed for the presence of cultural resources. In addition, all accessible granite outcrops were investigated for the presence of bedrock milling features. During the survey of the Phase 2 (north parcel) a number of structures and features were noted and include: a residence area consisting of a trailer and workshop; a dirt landing strip; an orchard; a horse corral; and a junk car yard. During the survey of the Phase 1 (south parcel), an unoccupied residence and an associated storage shed were identified but not determined to be cultural resources. Overall, no cultural resources were identified in the previous surveys.

Previously Identified Resources: The records search conducted for this EIR identified 22 cultural resources that were previously recorded within one-mile of the site, which are listed in **Table 3.5-1**. Of the 22 resources, eleven (CA-ORA-35, -241, -299, -994, -995, -1116, 33-000506, -000507, -003435, -004811, and -004885) are prehistoric archaeological sites, one (33-003837) is a historic-period archaeological site, and ten (33-000040, -007165, -007166, -007174, -007234, -020524, -020525, -020664, -020665, and -020666) are built historic resources. No cultural resources have been previously recorded with the boundaries of the project site.

TABLE 3.5-1
PREVIOUSLY IDENTIFIED CULTURAL RESOURCES WITHIN ONE MILE OF THE PROJECT SITE

P-Number	Trinomial	Forest Service Number	Other Designation	Description	Date Recorded
-	CA-ORA-299	-	-	Prehistoric site consisting of bedrock milling features and groundstone artifacts	1970
-	CA-ORA-1116	02-52-67	-	Lithic scatter	1986

P-Number	Trinomial	Forest Service Number	Other Designation	Description	Date Recorded
-	CA-ORA-241	-	-	Prehistoric site described as a large village or acorn gathering camp	1968
-	CA-ORA-994	05-02-52-10	Chiquito Basin Mortar Site	Prehistoric site described as a gathering and processing camp	1981
-	CA-ORA-995	05-02-52-10	Chiquito Basin Mortar Site	Prehistoric site described as a gathering and processing camp	1981
30-000035	CA-ORA-35	05-02-5	-	Prehistoric site described as an acorn gathering camp consisting of bedrock milling features, lithics, groundstone, and ceramics	2003
33-000040	CA-RIV-40H	05-02-52-58H	El Cariso Bridge	Footbridge constructed rocks and mortar	1982
33-000506	CA-RIV-506	-	-	Prehistoric site consisting of bedrock mortars and a pair of pictographs	1971
33-000507	CA-RIV-507	-	-	Prehistoric site consisting of bedrock mortars and a pit petroglyph	1971
33-003435	CA-RIV-3435	-	-	Prehistoric site consisting of one bedrock mortar, two slicks, and one possible pictograph on a single granite boulder	1991
33-003837	CA-RIV-3837H	05-02-52-74	CCC Dump Site	Historic period refuse dump consisting of glass, metal, and lumber fragments	1989
33-004811	CA-RIV-4811	05-02-52-85	Long Canyon Site	Prehistoric site consisting of bedrock mortars and a lithic scatter	1992
33-004885	CA-RIV-4885	05-02-52-88	Long Canyon BRM	Prehistoric site consisting of one bedrock milling feature	1991
33-007165	-	-	-	Small cabin built in a vernacular style constructed of stone in 1941	1982
33-007166	-	-	The Stone House	Rectangular shed constructed of stone in approximately 1900	1982
33-007174	-	-	-	Four historic period, wood-framed cabins constructed in 1945	1982
33-007234	-	-	Ortega Highway	Two-lane, asphalt highway constructed in 1925	1982
33-020524	CA-RIV-10425	-	-	A historic period asphalt-paved road	2011
33-020525	CA-RIV-10426	-	-	A historic period single lane, asphalt-paved road	2011
33-020664	CA-RIV-10571	-	-	Masonry bridge that served as an entrance to the El Cariso Campground	2011
33-020665	CA-RIV-10572	-	El Cariso Road	A historic period single lane, asphalt-paved road	2011
33-020666	CA-RIV-10573	-	Mountain Vista Road	A historic period asphalt-paved road	2011

Source: SCCIC and EIC, 2013.

The identified resources listed above suggests that prehistoric subsistence and occupation in the project vicinity that was periodic and limited in duration. Recorded sites within one mile of the project site appear to be relatively short-term encampments focused on plant resources that are recognized at ground surface as scattered groundstone and/or chipped stone. Although limited in number, sites tend to occur on somewhat gently sloping surfaces within small valleys and canyons, and in relative proximity to springs/seeps (i.e., Chiquito Spring) or seasonal stream channels.

Based on this, there appears to be a low potential to encounter archaeological resources in ridgetop locations. Hill slopes, some quite steep, may have offered resources such as acorns and other plant foods, as well as game, but these settings would not have been conducive to any sustained occupation and, therefore, are unlikely to have accumulated substantial cultural resources. Additionally, a high rate of erosion is likely to have further removed or reduced whatever archaeological resources may once have existed.

Based on the location of the resources listed in Table 3.5-1 that are generally in areas with slopes of less than 10 degrees, the potential for the presence of archaeological resources was determined. Areas with slopes of less than 10 degrees have greater potential for the presence of surficial or subsurface archaeological resources than those with slopes of 11 degrees or greater. Thus, the proposed development area, which is focused on flatter portions of the project site, has the potential to contain archaeological resources.

Historic Map Review

A review of the 1901 Lake Elsinore 30' United States Geological Survey (USGS) topographic quadrangle and the 1954 (photorevised 1973) and 1997 Alberhill 7.5' USGS topographic quadrangles as well as historic aerial photographs from the years 1938, 1952, 1967, 1978, 1981, and 2005 (Historic Aerials, 2013) was conducted. The 1901 Lake Elsinore and 1954 Alberhill topographic maps as well as the 1938 and 1952 historic aerials indicate very little development within the project site. Roads generally corresponding to the present-day Ortega Highway and Long Canyon Road are present, as is the Old Dominion Mine located northwest of the project site. The 1938 and 1952 aerial photographs show several dirt roads within and adjacent to the project site. The 1954 topographic map shows the Ortega Highway located east of the project site and the McConville Nudist camp located immediately adjacent to the west-central portion of the project site. The 1967 aerial photograph shows a building located in the northeast portion of the Phase 1 (south parcel). The northeast-southwest oriented landing strip located in the northwestern portion of the Phase 2 (north parcel), which was not depicted on the 1973 photorevised portion of the Alberhill map, first appears in the 1978 aerial photograph. The 1981 aerial photograph shows the landing strip and several cleared or graded areas in the Phase 2 (north parcel). The 2005 aerial photograph shows a structure in the central portion of the Phase 2 (north parcel), as well as several cleared or graded areas in both parcels. Two of the cleared areas in the Phase 2 (north parcel) appear to be used as storage areas for old cars.

Cultural Resources Survey

Cultural resource surveys of the Phase 2 (north parcel) and Phase 1 (south parcel) were conducted on Wednesday, August 21, 2013 and Friday, September 6, 2013 by ESA Associates Cultural Resources staff Madeleine Bray, M.A. Michael Vader, Laura MacDonald, and Robert Ramirez. They were accompanied by Native American monitors Augie Ortiz, Cody Schlater, and Brian Robbins of the Pechanga Band of Luiseño Indians.

Only those portions of the project site subject to development, as detailed in Chapter 2, Section 2.5, *Project Characteristics*, were surveyed. This includes all areas where the project proposes improvements or would be subject to ground disturbance, including the development of residences, new roads, road improvements, vineyards and landscaping, utility infrastructure, water tanks, and fuel modification zones. Areas that would remain as undisturbed open space were not surveyed as part of this effort.

The 2013 surveys resulted in identification and recordation of three new resources; two of which are prehistoric sites (Preserve-001 and -003) and one is a prehistoric isolate (Preserve-Iso-002), which are described below.

- **Resource Preserve-001** is a prehistoric archaeological site consisting of a sparse lithic scatter located within the Phase 2 (north parcel). Artifacts include six dark gray fine-grained metavolcanic flakes, one coarse grained light green metavolcanic flake, and one dark gray fine-grained metavolcanic spent core. The site is located along the margins of a dirt road on a southeast facing slope. The site measures 42 meters by 10 meters and due to its location on a slope within a dirt road, it is likely a secondary deposit of artifacts that have been washed down from their original location, and it does not contain diagnostic artifacts or any other dateable materials. Because it is likely a secondary deposit of artifacts, it is unlikely that the site contains a subsurface component. Resource Preserve-001 has not contributed to the broad patterns of history or cultural heritage (Criterion A/1). It is not associated with the lives of persons significant to the past (Criterion B/2). It does not exhibit the distinctive characteristic of a type, period, or method of construction, nor does it represent the work of an important creative individual, or possess high artistic values (Criterion C/3). The resource has not yielded and is unlikely to yield information important in prehistory (Criterion D/4). Moreover, resource Preserve-001 does not contain information needed to answer important scientific research questions that have demonstrable public interest; it does not a have special or particular quality such as being the oldest of its type or the best available example of its type; and it is not directly associated with a scientifically recognized important prehistoric or historic event or person. For these reasons the resource is not eligible for listing in the NRHP or the CRHR, and is not considered a historical or unique archaeological resource under CEQA.
- **Resource Preserve-Iso-002** is a prehistoric isolate consisting of a single unifacial (worn on one side) mano fragment recorded at the margin of a dirt road within the Phase 2 (north parcel). Due to its isolated nature and lack of clear cultural context, isolates are generally considered ineligible for inclusion on the NRHP and CRHR, unless the artifact itself is of exceptional significance. Resource Preserve-Iso-002 does not have the

potential to yield information important to the study of prehistory. The information potential of the isolate was exhausted in the process of documenting it on DPR Primary Record forms and mapping its location. This resource is not eligible for listing in the NRHP or the CRHR, and is not considered a historical or unique archaeological resource under CEQA.

- **Resource Preserve-003** is a prehistoric archaeological site consisting of a diffuse lithic scatter in the Phase 2 (north parcel). Artifacts include seven metavolcanic flakes, two metavolcanic flake tools, one of which exhibits retouch on one margin, and one quartz core. The site is located within a dirt road and immediately adjacent to a cleared lot that is being used as a storage for old cars. The site measures 68 meters by 32 meters, and appears to have been highly disturbed.

  The site has been highly disturbed and the artifacts are likely not within their original depositional context. Moreover, the site does not appear to contain diagnostic artifacts or any other dateable materials. Because it is likely a secondary deposit of artifacts, it is unlikely that the site contains a subsurface component. Resource Preserve-003 has not contributed to the broad patterns of history or cultural heritage (Criterion A/1). It is not associated with the lives of persons significant to the past (Criterion B/2). It does not exhibit the distinctive characteristic of a type, period, or method of construction, nor does it represent the work of an important creative individual, or possess high artistic values (Criterion C/3). The resource has not yielded and is unlikely to yield information important in prehistory (Criterion D/4). Resource Preserve-003 does not contain information needed to answer important scientific research questions that have demonstrable public interest; it does not a have special or particular quality such as being the oldest of its type or the best available example of its type; and it is not directly associated with a scientifically recognized important prehistoric or historic event or person. For these reasons the resource is not eligible for listing in the NRHP or the CRHR, and is not considered a unique archaeological resource under CEQA.

Paleontological Resources

A paleontological records, map, and literature search was conducted by staff at the Los Angeles County Natural History Museum (LACM) (McLeod, 2013). This included a review of regional geological maps and a search of the LACM's collections and fossil locality database to identify any paleontological resources known to exist within or near the project site.

The results of the records search indicated that most the project site appears to be underlain by plutonic igneous rocks that have no paleontological sensitivity. In Long Canyon, which runs through the middle of the project site, there are exposures of younger Quaternary Alluvium derived as fluvial deposits in the drainage. These deposits do not typically produce significant fossils in the upper layers, but may contain significant fossils at depth. In the very northeastern part of the project site are exposures of the marine late Cretaceous Bedford Canyon Formation, which has been known to produce significant vertebrate fossils.

No fossil localities have been previously recorded within the project site, but several fossil localities had been recorded in the Bedford Canyon formation, notably LACM 3797, located near

Modjeska Peak, which is approximately 8.4 miles northwest of the project site, that produced a fossil specimen of plesiosaur (McLeod, 2013).

Regulatory Setting

Section 106 of the National Historic Preservation Act

Archaeological resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC Section 470f), and its implementing regulation, Protection of Historic Properties (36 Code of Federal Regulations [CFR] Section 800). Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties, in consultation with the State Historic Preservation Officer (SHPO), Indian Tribes, and other interested parties, and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The term "historic properties" refers to "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register" (36 CFR Section 800.16(*l*)(1)). As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the National Register of Historic Places (NRHP). Under the NHPA, a resource is considered significant if it meets the NRHP listing criteria at 36 CFR 60.4 (36 CFR Section 800.16(*l*)(1)).

The implementing regulations (36 CFR Part 800) describe the process for identifying and evaluating historic properties, for assessing the potential adverse effects of federal undertakings on historic properties, and seeking to develop measures to avoid, minimize, or mitigate adverse effects. The steps of the Section 106 process are accomplished through consultation with the SHPO, federally-recognized Indian Tribes, local governments, and other interested parties. The goal of consultation is to identify potentially affected historic properties, assess effects to such properties, and seek ways to avoid, minimize, or mitigate any adverse effects on such properties. The agency also must provide an opportunity for public involvement (36 CFR Section 800.1(a)).

National Register of Historic Places

The NRHP was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR Section 60.2). The NRHP recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (36 CFR Section 60.4):

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for NRHP listing (36 CFR Section 60.4).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior 1995). The NRHP recognizes seven qualities that, in various combinations, define integrity. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association (36 CFR Section 60.4).

The State implements the NHPA through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historic Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the State's jurisdictions.

California Register of Historical Resources

The California Register of Historic Resources (CRHR) is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code [PRC] Section 5024.1[a]). The criteria for eligibility for the CRHR are based upon NRHP criteria (California PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for, or listed in, the NRHP.

To be eligible for the CRHR, a prehistoric or historical-period property must be significant at the local, State, and/or federal level under one or more of the following criteria (PRC Section 5024.1[c]):

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the CRHR must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance (14 CCR Section 4852(c)). It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the NRHP, but it may still be eligible for listing in the CRHR.

Additionally, the CRHR consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The CRHR automatically includes the following (PRC Section 5024.1[d]):

- California properties listed on the NRHP and those formally Determined Eligible for the NRHP;
- California Registered Historical Landmarks from No. 770 onward; and,
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR include (PRC Section 5024.1[e]):

- Historical resources with a significance rating of Category 3 through 5 (Those properties identified as eligible for listing in the NRHP, the CRHR, and/or a local jurisdiction register);
- Individual historical resources;
- Historical resources contributing to historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Senate Bill 18

Senate Bill 18 (SB 18) (Amended Section 815.3 of Civil Code, Chapter 905; 65352.3, 65352.4, and 65562.5 of Government Code), which went into effect January 1, 2005, requires local governments (city and county) to consult with California Native American tribes before making certain planning decisions and to provide notice to tribes at certain key points in the planning process, which is commonly referred to by tribes as "SB 18 Consultation. The intent is to "provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places" (Governor's Office of Planning and Research [OPR], 2005). Because the project requires a General Plan Amendment, the provisions of SB 18 are applicable.

The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level, land use designations are made by a local government. The consultation requirements of SB 18 apply to general plan or specific plan processes proposed on or after March 1, 2005.

According to the *Tribal Consultation Guidelines: Supplement to General Plan Guidelines* (OPR, 2005), the following are the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45-day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

California Assembly Bill 52

Assembly Bill 52 (AB 52), which became effective in January 2016 as Public Resource Code Section 21080.3.1, established a new requirement under CEQA to consider "tribal cultural values, as well as scientific and archaeological values when determining impacts and mitigation." Tribal Cultural Resources are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either included or determined to be eligible for inclusion in the California Register of Historical Resources or local registers of historical resources.

In addition, AB 52 implemented a new consultation process, in which lead agencies are required to offer Native American tribes that have submitted written requests to participate in consultations to protect tribal cultural resources and that Native American tribes have the opportunity to consult on CEQA documents prior to submitting an EIR. Pursuant to AB 52, lead agencies are required to provide formal notice to the tribes requesting to participate within 14-days of the lead agency's determination that an application package is complete. Tribes have 30-days to respond to request consultation on the project.

Although the provisions of AB 52 do not apply to this project, prior to implementation, the County and project team have worked in coordination with interested tribes regarding development of the project site. As described above, Native American monitors Augie Ortiz, Cody Schlater, and Brian Robbins of the Pechanga Band of Luiseño Indians participated in the 2013 cultural resource surveys of the proposed development areas. In addition, the County began the formal public outreach process as part of the NOP processes in 2013 and 2014 as further detailed below in Section 3.5.3 *Methodology*.

California Public Resources Code Section 5097

Section 5097 of the Public Resources Code provides procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. Section 5097.5 of the code states:

> *No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.*

As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state or any city, county, district, authority or public corporation, or agency thereof. Consequently, the City of Inglewood is required to comply with Public Resources Code Section 5097.5 because the TOD Plan is within its jurisdiction.

Section 5097.98 further defines the standards for the handling of Native American human remains. Section 5097.993 sets requirements related to the unlawful and malicious excavation, removal, destruction, injury, or defacing of a Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historic Resources.

California Health and Safety Code Section 7052

Section 7052 of the California State Health and Safety Code makes the willful mutilation, disinternment, or removal of human remains a felony. Section 7052.5 requires that any construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California NAHC.

County of Orange General Plan Resources Element

The Orange County General Plan Resources Element contains a Cultural-Historic Resources Component that includes the following applicable goals, objectives, and policies, relevant to cultural resources:

Goal 2: To encourage through a resource management effort the preservation of the county's cultural and historic heritage.

Objective 2.2: Take all reasonable and proper steps to achieve the preservation of archaeological and paleontological remains, or their recovery and analysis to preserve cultural, scientific, and education values.

Objective 2.3: Take all reasonable and proper steps to achieve the preservation and use of significant historic resources including properties of historic, historic architectural, historic archeological, and/or historical preservation value.

Objective 2.4: Provide assistance to County agencies in evaluation the cultural environmental impact of proposed project and reviewing EIRs.

Policies: The following policies addressing archeological, paleontological, and historical resources shall be implemented at appropriate stage(s) of planning, coordinated with the processing of a project application, as follows:

- Identification of resources shall be completed at the earliest stage of project planning and review such as general plan amendment or zone change.
- Evaluation of resources shall be completed at intermediate stages of project planning and review such as site plan review, subdivision map approval, or at an earlier stage of project review.
- Final preservation actions shall be completed at final stages of project planning and review such as grading, demolition, or an earlier stage of project review.

Archaeological Resources Policies

1. To identify archaeological resources through literature and records research and surface surveys.
2. To evaluate archaeological resources through subsurface testing to determine significance and extent.
3. To observe and collect archaeological resources during the grading of a project.
4. To preserve archaeological resources by:
   a) Maintaining them in an undisturbed condition, or
   b) Excavating and salvaging materials and information in a scientific manner.

Paleontological Resources Policies

1. To identify paleontological resources through literature and records research and surface surveys.
2. To monitor and salvage paleontological resources during the grading of a project.
3. To preserve paleontological resources by maintaining them in an undisturbed condition.

Goal 3: To Preserve and enhance buildings, structures, objects, sites, and districts of cultural and historic significance.

Objective 3.1: Undertake actions to identify, preserve, and develop unique and significant cultural and historic resources.

3.5.2 Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, cultural resources impacts could be considered significant if the project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or

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

According to the *CEQA Guidelines* (CCR Title 14, 15064.4), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (CCR Title 14, 15064.4(b)). The guidelines further state that a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historic resource would be materially impaired. Actions that would materially impair the significance of a historical resource are any actions that would demolish or adversely alter those physical characteristics of a historical resource that convey its historical significance and qualify it for inclusion in the CRHR or in a local register or survey that meet the requirements of PRC Sections 5020.1(k) and 5024.1(g).

As described in Section 1.0, *Introduction*, Notice of Preparations and Initial Studies were prepared and circulated for public review in both 2013 and 2014; the following comments related to cultural resource topics were received:

- Requests to provide Native American information and consultation regarding cultural resource sensitivity, as further detailed below.
- Potential existence of Native American artifacts in the project vicinity.
- Identification of any historic monuments on the project site.
- Request for Native American Monitoring during disturbance of the project site.
- Field monitoring for biological resources is required for utility installation.

3.5.3 Methodology

The significance determination for the cultural resources analysis is based on evaluation of the archival research, historic map survey, pedestrian surveys of the project site, documentation of cultural resources, and evaluation of the resources' significance. The paleontological resources analysis is based on a paleontological records, map, and literature search by staff at the LACM (McLeod, 2013). The evaluation identifies the potential for existence of unknown resources to be located within the development areas of the project site; then considers the risk of loss of resources that could result from construction and development activities pursuant to implementation of the proposed project.

Native American Contact Program

The Native American Heritage Commission (NAHC) maintains a confidential Sacred Lands File (SLF) which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on April 15, 2013 to request a search of the SLF. The NAHC responded to the request in a letter dated April 19, 2013. The letter indicated that Native American cultural resources are not known to be located within the project site on the Alberhill 7.5-minute USGS quadrangle. The letter also included an attached list of Native American contacts.

Contact letters to all individuals and groups indicated by the NAHC as having affiliation with the project site were prepared and mailed on May 9, 2013. The letters described the proposed project and included a map depicting the location of the project. Recipients were requested to reply with any information they are able to share about Native American resources that might be affected by the proposed project. To date, responses from the Juaneño Band of Mission Indians Acjachemen Nation, Rincon Band of Luiseño Indians, Pechanga Band of Luiseño Indians, Pala Band of Mission Indians, and Soboba Band of Luiseño Indians have been received and are summarized below.

On May 16, 2013 Joyce Perry of the Juaneño Band of Mission Indians, Acjachemen Nation, responded indicating that she would like to share information regarding the project site; and in an e-mail from August 19, 2013, Ms Perry provided information regarding the Juaneño Band of Mission Indians cultural resource organization and expressed a strong interest in being informed of the results of the cultural resources survey. Pursuant to her request, Ms. Perry was sent an email after the surveys in September 2013, which summarized the results.

In a letter dated May 21, 2013, Rose Duro of the Rincon Band of Luiseño Indians Culture Committee expressed concerns that development within the project site may impact cultural resources. However, Ms Duro stated that the project site is not within the Rincon Band's Historic boundaries and recommended that the Pechanga and Soboba Bands of Luiseño Indians be contacted. The Pechanga and Soboba Bands were included in the list of groups provided by the NAHC, and contact letters were mailed to them on May 9, 2013.

In a letter dated June 10, 2013, Tuba Ebru Ozdil, the Tribal Planner for the Pechanga Band of Luiseño Indians expressed concerns about development within the project site. The letter states that the project site is located within the Pechanga's ancestral territory and that the tribe is interested in participating in the project. According to the letter, the project site is surrounded by known village sites and ceremonial places. Additionally, Long Canyon, which bisects the central portion of the project site, was likely used as a trail connecting villages in the area. There is also a known rock art panel located near the project site. The letter states that the Pechanga would like to be consulted regarding all proposed developments within the project site. Furthermore, the Pechanga have requested the following: to be notified once the project begins the entitlement process, if applicable; copies of all applicable archaeological reports, site records, proposed grading plans, and environmental documents; government-to-government consultation with the Lead Agency; that an archaeological monitor and a Pechanga Tribe monitor be present during any earthmoving activities within the project site; and, in the event that subsurface cultural resources are identified, the Tribe request consultation with the project proponent and Lead Agency regarding the treatment and disposition of all artifacts.

A meeting was held on August 1, 2013, between ESA archaeologists and Pechanga cultural resources personnel, including Tuba Ebru Ozdil, Anna Hoover, and Paul Macarro, in order to discuss the proposed project. Pechanga cultural resources staff emphasized the sensitivity of the project site by highlighting the large number of prehistoric archaeological sites nearby that contained rock art and milling features. They suggested that a possible trail or travel corridor may have traversed the project site via Long Canyon. Pechanga representatives also expressed concern about potential impacts to oak trees and manzanita. Additionally, as described above, the Native

American monitors Augie Ortiz, Cody Schlater, and Brian Robbins of the Pechanga Band of Luiseño Indians also participated in the August 21, 2013 and Friday, September 6, 2013 cultural resource surveys of the proposed development areas.

In response to the NOP for the proposed project, the Pechanga sent a letter dated October 25, 2013 requesting to be included in the CEQA environmental review process, and to consult with the Lead Agency per SB 18. The Pechanga also provided information regarding cultural resources in the vicinity of the project area, including a known Luiseño village (*Taráxa*), several traveling routes and trails, and important rock art.

In a letter dated June 13, 2013, Shasta Gaughen of the Pala Band of Mission Indians Tribal Historic Preservation Office stated that the project site is located outside the boundaries of the territory that the Tribe considers it Traditional Use Area. Ms Gaughen expressed no objections to the project, and deferred to the wishes of Tribes in closer proximity to the project area.

In an email dated September 3, 2013, Laura Shaker of the Soboba Band of Luiseño Indians asked for the contact information for the lead agency and inquired as to whether other Native American groups had expressed an interest in the project. In response, Ms. Shaker was given the contact information of the lead agency as well as information on the other groups expressing interest in the project.

Although the above-referenced Tribes responded to the NOP and discussions and surveys have commenced, these activities may supplement but do not replace formal SB 18 consultation. Therefore, the County has provided the following Tribal Governments with a written invitation notice to consult:

- Agua Caliente Band of Cahuilla Indians
- Campo Band of Mission Indians
- Ewilaapaayp Tribal Office
- Jamul Indian Village
- Juaneno Band of Mission Indians
- Juaneno Band of Mission Indians Acjachemen Nation – Belardes
- Juaneno Band of Mission Indians Acjachemen Nation – Romero
- La Jolla Band of Luiseno Indians
- La Jolla Band of Mission Indians
- La Posta Band of Mission Indians
- Manzanita Band of Kumeyaay Nation
- Mesa Grande Band of Mission Indians
- Pala Band of Mission Indians
- Pauma Band of Luiseno Indians – Pauma and Yuima Reservation
- Pechanga Band of Mission Indians
- Rincon Band of Mission Indians
- San Luis Rey Band of Mission Indians
- San Pasqual Band of Mission Indians
- Soboba Band of Luiseno Indians
- Sycuan Band of the Kumeyaay Nation
- Viejas Band of Kumeyaay Indians

3.5.4 Project Impacts

Impacts 3.5-1 and 3.5-2: Would the project result in a substantial adverse change in the significance of a historical or archaeological resource, as defined in *CEQA Guidelines* Section 15064.5?

Less than Significant Impact with Mitigation Incorporated. As described above, three cultural resources, including two prehistoric lithic scatters and one prehistoric isolate, were recorded during 2013 cultural resources surveys within the project site. However, no other resources have been identified on the project site and none of the resources identified in 2013 is eligible for listing on the CRHR or meet CEQA's definition of a unique archaeological resource or historical resource. Thus, impacts to known resources onsite would not occur with implementation of the proposed project.

However, archival research indicates the project site lies within an area that is highly sensitive for cultural resources. A total of 22 previously recorded cultural resources are located within a one-mile radius of the project site. Of these, 11 are prehistoric in age and consist primarily of artifact scatters, bedrock milling features, and habitation sites. In addition, there is a potential for surface and subsurface archaeological resources to be located in valleys and canyons that have received alluvial deposits. Furthermore, representatives of the Pechanga Tribe indicate the project site is sensitive for cultural resources, and may have been within a prehistoric village site and travel corridor.

Of the 22 previously recorded cultural resources located within 1 mile of the project site, none are within 500 feet of the project site, and the majority are farther than 0.75 mile from the project site. Although no significant unique archaeological resources or historical resources have been identified on or adjacent to the development areas of the project site; and although 71 percent of the project site would be retained as undeveloped open space, which would reduce the potential for impacts to occur; it is possible that unknown unrecorded cultural resources may be located within the development portion of the project site that is located on the flatter portions of the project site, which have a greater potential for archaeological resources than steep portions of the site. Therefore, the proposed project may have the potential to unearth, expose, or disturb surface and/or subsurface archaeological, historical, or Native American resources. The project includes Project Design Features that would minimize potential impacts to unknown historical and archaeological resources, which include:

- The provision of 414.6 acres or approximately 71 percent of the project site would preserve large areas of open space onsite, which would preserve any archaeological resources within a large portion of the project site (PDF-1).
- Open space would be concentrated in the western and northern portions of the project site and the single-family residences would be clustered, which would buffer open space areas from future disturbances and focus ground disturbance, which would limit the potential impacts to unknown archaeological resources (PDF-2).

In addition, Mitigation Measures MM 3.5-1 and MM 3.5-2 would be implemented, which would provide for archaeological and Native American Monitors and a Cultural Resource Monitoring Plan that would prevent impacts to unanticipated discoveries of resources during project implementation. With implementation of Project Design Features PDF-1 and PDF-2 and Mitigation Measures MM 3.3-1 and MM 3.3-2, impacts related to historical or archaeological resources would be less than significant.

In addition to potential impacts to historical and archaeological resources described above, Tribal cultural places, if present on the site, could be impacted from project implementation. Based on the existing information described above and including a previously prepared confidential report, impacts to Tribal cultural places are presumed to be potentially significant. Because SB 18 consultation has yet to occur, it is unknown at this time if such resources are located on the project site. If present on the site it is unknown the extent and type of the resource. Therefore, formulation of specific mitigation measures is infeasible and impractical at this time. Moreover, and assuming the presence of Tribal cultural places, the existing mitigation measures may be adequate as provided and not need to be revised. Upon completion of SB 18 consultation with each of the tribes listed on the consultation request letter, the existing mitigation measures will be reviewed and revised as necessary, or additional mitigation measures will be provided.

Mitigation Measures

MM 3.5-1 Prior to the issuance of a grading permit, the applicant/developer shall provide written evidence to the County Building and Safety Division that a qualified archaeologist has been retained to address the potential discovery of unanticipated archaeological discoveries. In addition, written evidence must be provided that Native American monitors shall be allowed to monitor earthmoving activity related to the project.

In the event that archaeological materials, including stone tools, shells, bones, glass shards, ceramics, or other materials older than 50 years in age, are encountered during ground-disturbing activities, work in the immediate vicinity of the resource shall cease until a qualified archaeologist has assessed the discovery and appropriate treatment pursuant to CEQA Guidelines Section 15064.5 is determined.

If archaeological resources are found to be significant, the archaeologist shall determine, in consultation with the County and local Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Per CEQA Guidelines Section 15126.4(b)(3), preservation in place shall be the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and local Native American representatives expressing interest in prehistoric

or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2.

MM 3.5-2 Prior to the issuance of a grading permit, a Cultural Resources Monitoring Plan shall be prepared by a qualified archaeologist in consultation with the County and local Native American groups expressing interest. The plan shall identify the location and timing of cultural resources monitoring. Monitoring would occur in areas most likely to contain resources, such as valleys and canyons. The plan shall allow the qualified archaeologist, based on observations of subsurface soil stratigraphy or other factors during initial grading, and in consultation with the Native American monitor and the lead agency, to reduce or discontinue monitoring as warranted if the archaeologist determines that the possibility of encountering archaeological deposits is low. The plan shall provide the appropriate measures to be followed in the event of unanticipated discovery of a cultural resource consistent with *CEQA Guidelines* Section 15126.4(b)(3), as well as identify the appropriate data recovery methods and procedures to reduce or eliminate the effect of the project if avoidance of significant historical or unique archaeological resources is determined to be infeasible. The plan shall also include reporting of monitoring results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals. The plan shall be submitted to the County Department of Building and Safety for review and approval prior to the issuance of a grading permit and any resulting archaeological requirements shall be incorporated into all development plans and included on project permits.

Impact 3.5-3: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant Impact with Mitigation Incorporated. The majority of the project site is underlain by plutonic igneous rocks that have no paleontological sensitivity. In Long Canyon, which runs through the middle of the project site, there are exposures of younger Quaternary Alluvium derived as fluvial deposits in the drainage. These deposits do not typically produce significant fossils in the upper layers, but may contain significant fossils at depth.

The northeastern portion of the project site contains exposures of the marine late Cretaceous Bedford Canyon Formation, which has been known to produce significant vertebrate fossils; however, this area would be retained as open space and would not be impacted by the proposed project. Because the plutonic igneous rocks that underlie the majority of the project site have no paleontological sensitivity, ground disturbance in this formation would not impact paleontological resources. Shallow excavations in the younger Quaternary Alluvium that is present in Long Canyon would likely not impact paleontological resources; however, deeper excavations in Quaternary Alluvium soils may encounter vertebrate fossils, which would be a

significant impact. The project would maintain open space (Project Design Feature PDF-1) and cluster development (Project Design Feature PDF-2) listed above in the Impacts 3.5-1 and 3.5-2 discussion, thereby minimizing ground disturbance and reducing potential impacts to paleontological resources. In addition, Mitigation Measure MM 3.5-3 has been provided to reduce potential impacts to paleontological resources related to excavations in Quaternary Alluvium soils to a less than significant level.

Mitigation Measure

MM 3.5-3 Prior to the issuance of a grading permit, the applicant/developer shall provide written evidence to the County Department of Building and Safety that a qualified paleontologist has been retained to respond on an as-needed basis to address unanticipated paleontological discoveries, and the paleontological requirements shall be incorporated into all development plans submitted and included as conditions of approval. In the event that paleontological resources are encountered during grading and construction operations, all construction activities shall be halted or redirected to provide for the qualified paleontologist to assess the find for significance and, if necessary, develop a paleontological resources impact mitigation plan (PRIMP) for the review and approval by the County prior to resuming construction activities.

Impact 3.5-4: Would the project disturb human remains, including those interred outside of formal cemeteries?

Less than Significant Impact. There is no indication, either from the archival research results, the archaeological survey, or input received to date from Tribes, that any location in the project site has been used for human burial purposes in the recent or distant past. The Pechanga have expressed concern that burials may exist in proximity to waterways; however, the project would not develop areas directly adjacent to waterways. In addition, the project includes Project Design Features that would reduce the development area, which would also reduce the potential for discovery of unknown human remains. The project would dedicate 71 percent of the site to open space (Project Design Feature PDF-1) and cluster development (Project Design Feature PDF-2), thereby minimizing ground disturbance and reducing potential impacts to unknown human remains.

In the event of an inadvertent discovery or recognition of any human remains during ground disturbance activities, regulations pursuant to California Health and Safety Code Section 7050.5 would be implemented. These regulations require that if human remains are unearthed during construction, then no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition of the remains pursuant to Public Resource Code Section 5097.98, which outlines the NAHC notification process and the appropriate procedures if the Coroner determines the human remains to be Native American. Compliance with applicable regulations during implementation of the project would protect unknown and

previously unidentified human remains, and impacts related to unknown human remains would be less than significant.

3.5.5 Cumulative Impacts

The geographic scope for cumulative impacts to cultural and paleontological resources includes an area encompassing the northern Santa Ana Mountains. This geographic scope of analysis is appropriate because the archaeological, historical, and paleontological resources within this area are expected to be similar to those that occur on the project site because of their proximity and similar environments, landforms, and hydrology would result in similar land-use—and thus, site types. Similar geology within this vicinity would likely yield fossils of similar sensitivity and quantity.

The project vicinity contains archaeological and historical resources; thus, there is potential for ongoing and future development projects to disturb areas that may contain cultural resources. Three projects have been proposed near Lake Elsinore within the geographic scope for cumulative impacts to cultural resources and would be expected to have similar impacts on cultural resources as the proposed project. However, because the project would maintain the majority of open space onsite (Project Design Feature PDF-1), would cluster development (Project Design Feature PDF-2), and implement mitigation measures to avoid potential impacts to any unknown cultural resources that are encountered during construction activity, which would reduce project impacts to a less than significant level. Thus, with implementation of mitigation, the proposed project would not result in a cumulatively considerable impact. Therefore, cumulatively considerable impacts to archaeological and historical resources would be less than significant.

Similarly, excavation activities associated with the proposed project in conjunction with other projects in the area could contribute to the progressive loss of fossil remains, as-yet unrecorded fossil sites, associated geological and geographic data, and fossil bearing strata. However, the proposed project would have less than significant impacts by implementing Mitigation Measure MM 3.5-3. With implementation of Mitigation Measure MM 3.5-3, the proposed project would not result in a cumulatively considerable impact related to paleontological resources, and cumulative impacts related to paleontology would be less than significant. Furthermore, through implementation of California Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98 the project's potential to disturb any human remains would be less than cumulatively considerable, and less than cumulatively significant.

3.6 Geology and Soils

The purpose of this section is to analyze the potential impacts related to geology and soils. Several resources were consulted, including a Geotechnical Assessment (Terrestrial, 2014a), an Onsite Wastewater Treatment System Memorandum (PACE, 2014), a Response to County Comments on Onsite Wastewater Treatment Systems Memorandum (Terrestrial, 2014b) and a Draft Geotechnical Assessment prepared in 2008 (PSE, 2008). These four documents are provided in Appendices D1 through D4 of this EIR, respectively. Resources reviewed also include the Water Quality Management Plans (WQMPs) prepared for Phase 1 (north parcel) (Hunsaker, 2014a) and for Phase 2 (south parcel) (Hunsaker, 2014b) located in Appendices H1 and H2 of this EIR, respectively.

3.6.1 Environmental Setting

Existing Conditions

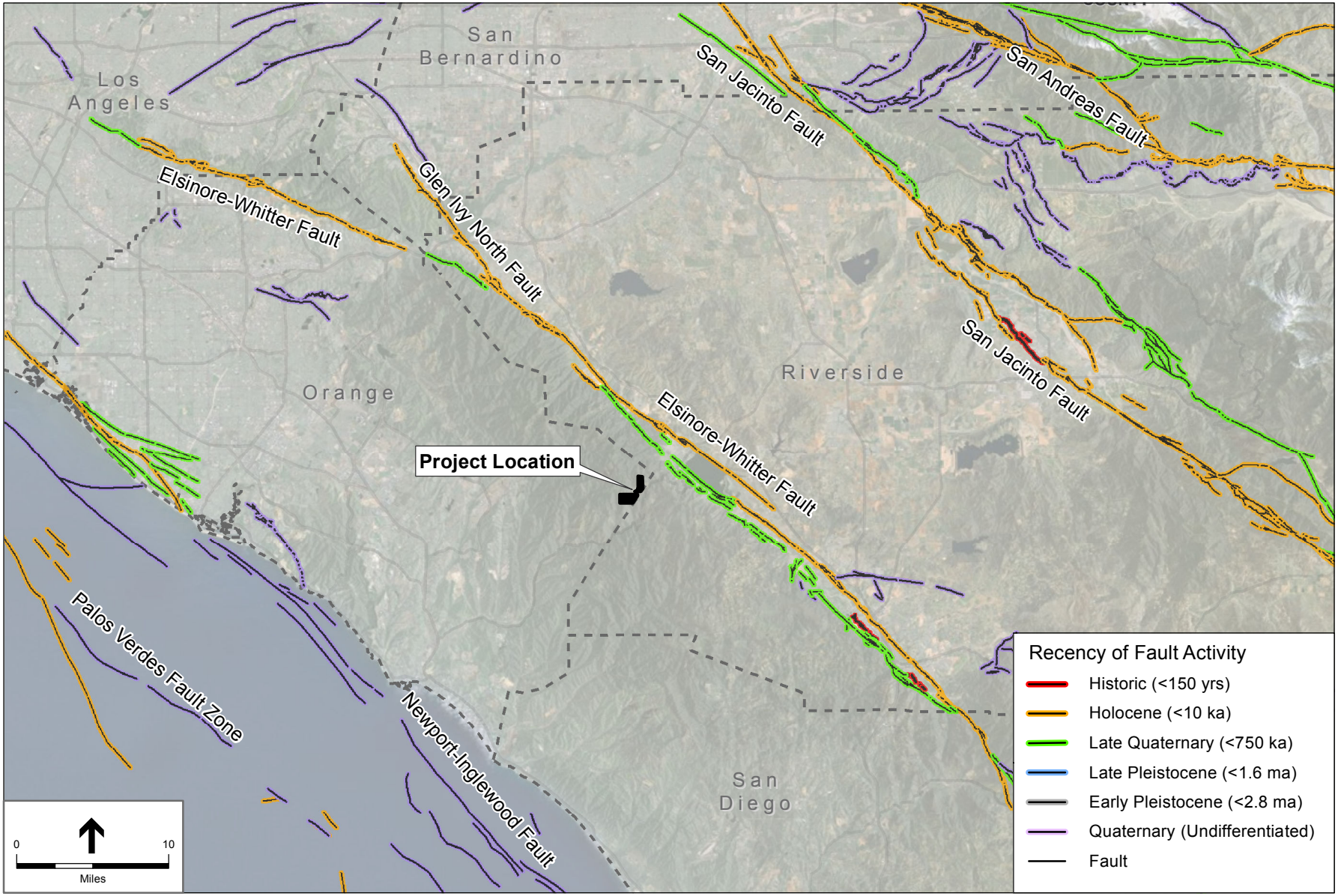
The project area is located within the Santa Ana Mountains that are part of the Peninsular Range geomorphic province in Southern California (Terrestrial, 2014a), which consists of a series of mountain ranges separated by northwest trending valleys sub-parallel to faults branching from the San Andreas Fault (CGS, 2002a).

The project site consists of varied terrain. The northernmost area has a steep high ridgeline and the southernmost area is a deep canyon. The bulk of the proposed developable area is gently rolling hills and small irregular valleys on a large plateau. Elevations range from approximately 3,300 feet above mean sea level (amsl) in the northeast portion of the property to approximately 2,025 amsl in the southern major canyon bottom. Most of the proposed development area is between the elevations of 2,400 amsl and 2,900 feet amsl. The project site drains by overland or sheet flow to the smaller canyons that flow into Long Canyon (Terrestrial, 2014a).

Regional Faults and Ground Shaking

The project area lies within a region of California that is seismically active. Alquist-Priolo Earthquake Fault Zones are regulatory zones that encompass surface traces of active faults that have a potential for future surface fault rupture (DOC, 2011). The project site does not contain any Alquist-Priolo Earthquake Fault Zones; however, the Elsinore Fault Zone is located approximately three miles north of the project site (DOC, 2006). The EFZ has been divided into segments, including the Whittier and Glen Ivy, which form the northern section of the fault and are closest to the project study area. The EFZ's most recent seismic event within the project vicinity occurred in 1910, with a magnitude of 6.0 (SCEDC, 2013). In addition, the SAF is capable of producing an earthquake with a magnitude of 8.1. While the potential damage from a magnitude of 8.1 earthquake on the SAF would likely produce the greatest damage nearest to the epicenter, some effects may be experienced within eastern Orange County (Lin, 2010).

The next closest active faults to the project site include the Newport-Inglewood Fault Zone located 24 miles west, the San Jacinto Fault Zone located 24 miles northeast, and the San Andreas Fault Zone located approximately 56 miles northwest (USGS, 2013). The location and approximate age of active regional faults within the project study area are shown in **Figure 3.6-1**.



SOURCE: ESRI, USGS 2011

The Preserve at San Juan

Figure 3.6-1

Regional Fault Locations and Activity

Seismic hazards may include ground shaking, liquefaction (failure of water-saturated soil), lateral spreading, and earthquake-induced landslides. To be located in a state seismic hazard zone means that there is likelihood that weak soil and/or rock are present beneath the property. If present, these weak materials can fail during an earthquake and, unless proper precautions are taken during grading and construction, can cause damage to structures (DOC, 2013a). The Southern California area is tectonically active, and known to be subject to seismic hazards (SCEC, 2013).

Ground Shaking

Southern California is a generally seismically active region and the proposed project is likely to be subjected to significant ground shaking motion during the design life of the project (Terrestrial, 2013a).

Richter magnitude (M) is a measure of the size of an earthquake as recorded by a seismograph, a standard instrument that records ground shaking at the location of the instrument. The reported Richter magnitude for an earthquake represents the highest amplitude measured by the seismograph at a distance of 100 kilometers from the epicenter. Richter magnitudes vary logarithmically with each whole number step representing a tenfold increase in the amplitude of the recorded seismic waves (CGS, 2002b).

Earthquakes with a Richter value of 5.0 or higher are potentially damaging (Schultz and Wallace, 2013). The likelihood of an earthquake with a magnitude over 5.0 occurring in the next 30 years at the project site is 80 percent (USGS, 2009). The Elsinore fault zone is the closest active fault zone to the project vicinity (Terrestrial, 2014a).

Another common measure of ground motion is the peak ground acceleration (PGA). The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. In terms of automobile accelerations, one “g” of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds. A maximum probable event could produce PGA values at the project site ranging from 0.63g for rock and 0.70 for soft rock (PSE, 2008).

Liquefaction

Soil liquefaction is a phenomenon in which saturated, cohesionless soils layers, located within approximately 50 feet of the ground surface, lose strength due to cyclic pore water pressure generation from seismic shaking or other large cyclic loading. Soils that are most susceptible to liquefaction are clean, loose, saturated, and uniformly graded fine-grained sands that lie below the groundwater table within approximately 50 feet below ground surface. The project site is not underlain by a high groundwater table or fine-grained sands (Terrestrial, 2014a). Hence, the project site is not located in a liquefaction zone.

Landslides and Lateral Spreading

Landslides are a type of seismic hazard. Landslides consist of two parts—the material that failed and the type of movement that the failed material exhibited. There are five common material and movement combinations: rock slides, earth flows, debris slides, debris flows and rock falls (DOC,

2013b). Lateral spreading refers to landslides that form on gentle slopes and have rapid fluid-like flow movement similar to water (USGS, 2012). The project site does not contain any landslide zones and no landslides are known to exist within the project site (DOC, 2006).

Natural slopes steeper than 1.5:1 horizontal to vertical and cut slopes that expose unfavorable geologic conditions such as low strength or poorly cemented soils, are potentially susceptible to the secondary seismic hazard of earthquake-induced rock falls or minor landsliding. Rock falls generally only occur on slopes steeper than 1.5:1. The area of the project site that is proposed for development does not contain any significant slopes that are steeper than 1.5:1 (Terrestrial, 2014a).

On-site Soils

Soil Morphology

Deposits of topsoil of relatively minor thickness (a few feet) are present over a majority of the project site. The relative lack of topsoil is due to the arid environment and the hardness of the bedrock. Seasonal runoff is the principal agent of erosion in addition to local, shallow, soil slumping (Terrestrial, 2014a). The dominant soil series on Phase 1 (south parcel) are Blasingame, Capistrano, and Cieneba. The dominant soil series on Phase 2 (north parcel) are Capistrano, Cieneba, and Friant (NRCS, 2013). **Table 3.6-1** shows each soil series' depth and drainage, permeability, concrete corrosion potential rating, and steel corrosion potential rating.

Expansive Soils

Expansive soils are fine-grained soils (generally high plasticity clays) that can undergo a significant increase in volume with an increase in water content and a significant decrease in volume with a decrease in water content. Changes in the water content of an expansive soil can result in severe distress to structures constructed upon the soil. The project site is underlain by rock and shallow soils that are generally low to non-expansive.

TABLE 3.6-1
SOIL DRAINGE, PERMEABILITY AND CORROSION POTENTIAL RATING FOR CONCRETE AND STEEL

Soil Series	Depth and Drainage	Permeability	Concrete Corrosion Potential	Steel Corrosion Potential
Blasingame	Moderately deep; well-drained	Moderately slow	Moderate	Moderate
Capistrano	Very deep; well-drained	Moderately rapid	Low	Low
Cieneba	Shallow; excessively drained	Moderately rapid	Low	Low
Friant	Shallow; well-drained	Moderately rapid	Low	Low

SOURCE: USDA, 2001a-c; USDA, 2012; NRCS, 2013.

Septic Suitability

Soil types affect the ability of soils to purify wastewater effluent and to allow the effluent to percolate (USEPA, 2006). Soils appropriate for supporting onsite wastewater treatment systems,

which include septic tanks, have particular percolation rates and sufficient depth to bedrock and groundwater. A soils analysis has mapped various locations on the project site that have the ability to adequately support onsite wastewater treatment systems.

A subsurface investigation was performed in 2013 to determine the percolation characteristics of the soil and bedrock at the site. In March 2013, 34 test pit trenches with a rubber tired backhoe were excavated. Percolation testing was conducted in seventeen of these trenches. In November 2013, an additional subsurface investigation was conducted consisting of eight backhoe trenches and 34 additional test pits for preliminary percolation testing. The percolation tests determined that the soils are suitable for percolation (Terrestrial, 2014a). The landscaping areas that would be irrigated by treated effluent have been designed to use all the effluent that would be generated by the project. In addition, as described below, the onsite wastewater treatment systems would be installed in compliance with the Orange County On-site Sewage Absorption System Guidelines and the State Water Resources Control Board (SWRCB) On-Site Wastewater Treatment System Policy, which requires soil percolation tests to be performed during construction activities at each proposed on-site wastewater treatment system location prior to receipt of operational permits, which would ensure the suitability of the landscaping areas at each septic location.

Drip Irrigation Suitability

The project would utilize treated effluent for irrigation in portions of Fuel Modification Zone B. A surficial stability analysis was prepared to determine if the amount of additional soil moisture produced by the drip system during the winter months would impact either surficial and/or gross stability of the fill slopes where they would be placed (Terrestrial, 2014b).

Regulatory Setting

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 to "*reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program*." To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by NEHRP, which refined the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the proposed project would be required to adhere.

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The CBC is based on the International Building Code (IBC; previously known as the Uniform Building Code) published by the International Code Conference. In addition, the CBC contains necessary California amendments, which are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements of the CBC take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC and CBC. Furthermore, the County of Orange has adopted the standards of the CBC in Section 7-1-12 of the County's Codified Ordinances; and compliance with applicable regulations are verified by the County prior to approval of building permits.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "waters of the state," file a report of waste discharge (ROWD). This report requires a complete characterization of the discharge including design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any BMPs used, and a description of disposal methods, and a site map.

The project site is located within the jurisdiction of the San Diego Regional Water Quality Control Board (RWQCB). Upon review of the report of waste discharge, the San Diego RWQCB would provide feedback and determine the appropriate permits required for onsite wastewater treatment system and septic tank installation.

State Water Resources Control Board – Water Quality Control Policy for Siting, Design, Operation and Maintenance of On-site Wastewater Treatment Systems

On June 19, 2012, the SWRCB adopted Resolution No. 2012-0032—the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of On-site Wastewater Treatment Systems which establishes a statewide, risk-based, tiered approach for the regulation and management of on-site wastewater treatment system installations and sets levels of performance and protection required from on-site wastewater treatment systems in order to avoid water quality degradation and protect public health. The Policy lists corrective action requirements for failing or potentially failing systems and includes minimum monitoring and reporting requirements; exemption criteria; and conditional waiver of waste discharge requirements (SWRCB, 2012a). The Policy also conditionally waives the requirement for owners of on-site wastewater treatment systems to apply for and receive Waste Discharge Requirements in order to operate their systems when they meet the conditions set forth in the Policy. The San Diego RWQCB was required to incorporate these standards into its Water Quality Control Plan (Basin Plan) by May 13, 2014 (SWRCB, 2012b).

Regional Water Quality Control Board – Guidelines for New Community and Individual Sewerage Facilities

The RWQCB adopted Guidelines for New Community and Individual Sewerage Facilities (Resolution No. 79-44) on June 25, 1979. An updated set of guidelines is included in the 2011 Basin Plan, which supersedes Resolution No. 79-44 and has the goal of improving the efficiency of the review process, eliminating unnecessary Regional Board regulation, and improving protection of ground water quality.

Authority deferral to a County health officer in regard to onsite wastewater treatment systems would occur if the project operator satisfies the following conditions: (1) the use of new individual subsurface disposal systems for any subdivision of land will be in the best public interest; (2) individual disposal systems will comply with all existing county design criteria; (3) the cumulative impact from proposed individual disposal system(s) or from new commercial and/or industrial development(s) will not cause adverse impacts to the beneficial uses of ground water; (4) individual disposal systems will meet the minimum unsaturated soil thickness between the bottom of leach lines or the bottom of seepage pits and the historic high ground water level. The minimum unsaturated soil thickness is nine feet for soils with good percolation rates, 12 feet for soils with moderate percolation rates, and 14 feet for soils with poor percolation rates. Exceptions to the unsaturated soil thickness criteria may be allowed by the appropriate County health officer, based upon knowledge of local site conditions.

Upon receipt of the report of waste discharge for the proposed onsite wastewater treatment systems, the San Diego RWQCB would determine whether the proposed project would meet the above listed criteria and authority would defer to the County Department of Health for regulation and protection of groundwater quality.

Orange County General Plan Safety Element

The following goal and policies are contained within the Orange County General Plan that would apply to the proposed project.

Goal 1: Provide for a safe living and working environment consistent with available resources.

Objective 1.1: To identify public safety hazards and determine the relative threat to people and property in Orange County.

Goal 2: Minimize the effects of public safety hazards through implementation of appropriate regulations and standards which maximize protection of life and property.

Objective 2.1: To create and maintain plans and programs which mitigate the effects of public safety hazards.

Objective 2.2: To encourage the development and utilization of technologies that minimizes the effects of public safety hazards.

Orange County Regulations for Wastewater Treatment and Disposal Systems

Effective April 1, 2015, County Regulations for Wastewater Treatment and Disposal Systems include minimum horizontal setback requirements from various and features for onsite wastewater treatment systems. The purpose of these setbacks is to avoid damage to existing utilities, ground instability and water quality degradation. These setbacks are shown in **Table 3.6-2** (Orange County, 2013).

TABLE 3.6-2
MINIMUM HORIZONTAL SETBACKS FOR GROUND ABSORPTION SYSTEMS WHERE TS-I PRETREATMENT SYSTEMS ARE USED FOR < 1000 GALLONS PER DAY

Land Feature or Component	TS-I (feet)
Any public water supply	100
Streams classified as WS-I, except for saprolite	70
Waters classified as S-A, from mean high water mark	70
Other coastal waters, from mean high water mark	35
Any other stream, canal, marsh or other surface waters, from normal pool elevation	35
Any Class I or Class II reservoir, from normal pool elevation	70
Any permanent storm water retention pond, from flood pool elevation	35
Any other lake or pond, from normal pool or mean high water elevation	35
Any building foundation	5
Any basement	15
Any property line	10
Top of slope of embankments or cuts of 2 feet or more vertical height	15
Any water line	10
Upslope interceptor/foundation drains/diversions	7
Sideslope interceptor/foundation drains/diversions	10
Downslope interceptor/foundation drains/diversions	20
Groundwater lowering ditches or devices	20
Any swimming pool	15
Any other nitrification field (except the system repair area)	10

Orange County On-Site Sewage Absorption System Guidelines

Required as part the Orange County Building Plan Check, the Orange County On-Site Sewage Absorption System Guidelines are intended to provide a uniform approach to percolation testing requirements and design criteria of an on-site sewage absorption system. The Orange County Public Works Department's approval of proposed on-site sewage systems may be either a requirement for recordation of a parcel/tract map or a requirement before building/structural permits are issued. There are two main conditions for approval of an on-site sewage system: 1) percolation tests must be performed in accordance with County procedures onsite wastewater treatment systems; and 2) the system must be designed in accordance with County standards.

Four copies of the engineer's soil percolation reports must be submitted to the Plumbing Plan Check Section at the Orange County Public Works Department. All reports must include a log of all soil borings and percolation tests as well as plans showing a designated system. Reports and plans submitted to obtain Building Permits must include (Orange County, 2014):

- Depth to groundwater
- Depth to any impervious layers
- Acceptable result of six percolation tests distributed throughout an area set aside for trench leach fields and/or at least one passing percolation for seepage pits for the proposed dwelling
- Distance between trenches or seepage pits
- Location of property lines
- Drainage courses
- Soils characteristics
- Trench width or pit diameter
- Pit depth or depth of gravel below pipe
- Topographic lines, if steep slopes exist
- Footprint of house
- Outline of septic tank and distribution box
- The plan must reflect all conditions after precise grading (Orange County, 2010).

In order to test the feasibility of percolation at the project site, a preliminary subsurface investigation was performed to determine the percolation characteristics of the soil and bedrock at the site. In March 2013, 34 test pit trenches with a rubber tired backhoe were excavated. Percolation testing was conducted in seventeen of these trenches. In November 2013, an additional subsurface investigation was conducted consisting of eight backhoe trenches and 34 additional test pits for percolation testing (Terrestrial, 2014a). Additional detailed information is provided in the Geotechnical Assessment, included as Appendix D1 of this EIR. In addition, the Orange County On-Site Sewage Absorption System Guidelines require the project operator to perform soil percolation tests at each specific proposed onsite wastewater treatment system location prior to permit approval, to ensure appropriate soil suitability.

Orange County Grading and Excavation Code and Grading Manual

The Orange County Grading and Excavation Code and County Grading Manual provide information pertaining to grading permit requirements (application, clearances, soils and engineering report content, issuance and expiration); fees; cuts; fills; setbacks; drainage and terracing; erosion control and inspection.

3.6.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to geology and soils, a project could have a significant effect on the environment if it would:

- 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;
  - Strong seismic ground shaking,
  - Seismic-related ground failure, including liquefaction, or
  - Landslides;
- Result in substantial soil erosion or the loss of topsoil;
- 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;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal system where sewers are not available for the disposal of waste water.

It was determined in the Notice of Preparations/Initial Studies (Appendices A1 and A2) that implementation of the proposed project would have no impact related to the exposure of people or structures to the rupture of a known earthquake fault; expansive soils; and liquefaction. No public comments were received during the public scoping periods for the Notice of Preparations/Initial Studies related to these thresholds. Therefore, no further analysis of those significance criterion is included in the EIR.

However, a comment related to the potential for soil erosion to occur during road related work was received. Potential impacts related to soil erosion during construction is described below.

3.6.3 Methodology

The significance determination for the geology and soils analysis is based on a review of existing literature as well as the Geotechnical Assessments prepared for the proposed project (Terrestrial, 2014a), an Onsite Wastewater Treatment System Memorandum (PACE, 2014), Draft Geotechnical Assessment prepared in 2008 (PSE, 2008), and WQMPs prepared for Phase 1 (south parcel) (Hunsaker, 2014a) and for Phase 2 (north parcel) (Hunsaker, 2014b). These assessments presented findings, conclusions, and recommendations concerning development of the project based on the engineering analysis of geotechnical properties of the subsurface conditions, evaluation of geotechnical properties of soils, and a summary of findings, conclusions, and recommendations. The sections that follows discusses the identified impacts and the measures that would be incorporated to mitigate potentially significant impacts.

3.6.4 Project Impacts

Impact 3.6-1: Would the project 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 project site is located in the highly seismically-active region of Southern California, and is likely to be subjected to significant ground shaking during the design life of the project. Because ground shaking could result in significant damage to buildings and associated infrastructure, the County requires that all construction meet the latest standards of the CBC code requirements, as included in the Orange County Codified Ordinances Article 2, Buildings and Structures. In addition, the project specific geotechnical assessment that are completed and are required by the County's Codified Ordinances would determine final design standards for the walls, foundations, foundation slabs, and surrounding related improvements (utilities, roadways, parking lots and sidewalks). Compliance with the existing construction and building safety design standards that are verified by the County's Building and Safety Department during the permitting process, would reduce potential impacts associated with ground shaking at the project site to less than significant levels.

Prior to the issuance of a grading and/or building permits, the project operator would be required to submit final building plans and final grading plans to the County Building and Safety Department to ensure compliance with the County and state building regulations. The project operator would also be required to provide a Final Geotechnical Assessment with its submittal for a grading permit. Compliance with all geotechnical and soil requirements and recommendations provided in the Final Geotechnical Assessment, as required by Mitigation Measure MM 3.6-1, would reduce potential impacts related to seismic ground shaking to a less than significant level.

Mitigation Measure

MM 3.6-1 Prior to the issuance of a grading permit, the applicant shall have a qualified civil engineer prepare final grading plans and a Final Geotechnical Assessment in conformance with the California Building Code, County Grading and Excavation Code, that shall be approved by the County's Building and Safety Department.

Impact 3.6-2: Would the project 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. Although the project is not mapped as being within a landslide zone, and no landslides are known to exist within the project site (DOC, 2006), landslides could occur on the project site because it contains ridges, ravines, and gullies that have moderate to high topographic relief, rocky terrain, and steep slopes. However, these highly topographic areas are proposed for undeveloped open space, and the proposed development areas do not contain any significant slopes. The most inclined slopes in the development area are 1.5:1 (Terrestrial, 2014a). In addition, the geotechnical reports prepared for the project (Terrestrial, 2014a; PSE, 2008) state that the bedrock underlying the development areas are capable of supporting 2:1 or flatter cut slopes, which are compliant with the requirements of the County's Codified Ordinances.

The residential sites in both phases have been clustered in areas where the existing topography is suitable for development and that limited grading would be required. Additionally, Project Design Feature PDF-10 would reduce the potential for landslides by developing flat residential building pads while maintaining a similar topography on-site, geologic stability would be maintained. Furthermore, as required by Mitigation Measure 3.6-1, grading plans and a Final Geotechnical Assessment are required prior to approval of a grading permit; thus, overall, impacts related to landslides would be less than significant.

Mitigation Measure

MM 3.6-1 *(Provided previously under Impact 3.6-1)*

Impact 3.6-3: Would the project result in substantial soil erosion or the loss of topsoil?

Construction

Less than Significant Impact with Mitigation Incorporated. As described in Section 2.0, *Project Description*, Phase 1 (south parcel) would require 313,800 cubic yards of cut and fill and Phase 2 (north parcel) would require 221,700 cubic yards of cut and fill. Total excavation over both phases is estimated at 535,500 cubic yards, with 10,000 cubic yards to be excavated on a maximum day. These grading and excavation activities have the potential to result in top soil loss and soil erosion by exposing bare soil to wind and rain. In addition, construction of the project would require clearing of existing vegetation, which would loosen soil structure and expose bare soil making it more easily eroded by wind and rain, especially on slopes. All excavated soils would be balanced on-site; thus, no import or export of soils would be necessary.

To eliminate the potential of construction related erosion, the project is required to comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (Construction General Permit) as included as Mitigation Measure MM 3.9-1 in Section 3.9, *Hydrology and Water Quality*. In compliance with the Construction General Permit, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared and implemented, which would include BMPs that would minimize

loss of top soil and soil erosion during construction, preventing soil from washing into storm drains and adjacent natural habitats. Refer to Section 3.9, *Hydrology and Water Quality* and Mitigation Measure MM 3.9-1.

Operation

Operation of the proposed project also has the potential to result in soil erosion through hydromodification, which is defined as any activity that increases the velocity and volume (flow rate), and often the timing, of runoff (SWRCB, 2009). The project would develop impermeable areas and structures on the project that that would alter existing drainage patterns. However, the project includes several Project Design Features that are provided to minimize runoff and erosion potential:

- Landscape plan that has been designed, in part, to minimize surface water runoff (Project Design Feature PDF-4);
- Adhering to hydromodification requirements established by the Municipal Separate Storm Sewer System permit (Project Design Features PDF-13 and PDF-14);
- Providing Low Impact Development techniques and BMPs to minimize the impervious footprint of the project, promote infiltration, and slow down surface flows (Project Design Feature PDF-15);
- Hydrology technical analysis and implementation of a WQMP to ensure that existing runoff velocities and peak discharges would not be exceeded with implementation of the project (Project Design Features PDF-16 and PDF-17); and
- Minimization of disturbances to natural drainages (Project Design Feature PDF-14).

To address runoff from the developed portions of the project site the WQMPs includes vegetated swales, vegetated culverts and gutters installed within both phases to convey storm water to infiltration basins, catch basins or detention/drywell systems that would capture and retain the difference in runoff flow rates between the site's existing and proposed conditions (Hunsaker, 2014a; 2014b). See Section 3.9, *Hydrology and Water Quality* for a more detailed explanation of water quality, stormwater control, and the WQMP. Overall, with implementation of the required SWPPP, WQMP, and their associated BMPs would reduce the potential for substantial soil erosion or the loss of topsoil to a less than significant level.

Mitigation Measure

MM 3.9-1 *(Provided in Section 3.9, Hydrology and Water Quality, under Impact 3.9-1)*

Impact 3.6-4: Would the project 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 lateral spreading or collapse?

Less than Significant Impact with Mitigation Incorporated. Lateral spreading is a type of landslide that occurs on gentle slopes. The project site is underlain by highly weathered granite and alluvial deposits that are likely to result in lateral spreading or collapse (Terrestrial, 2014a).

However, the same regulations that apply to seismic ground shaking and landslides that are described above, also apply to lateral spreading and collapsible soils. Compliance with the CBC and the County's requirements in the Codified Ordinances would ensure that structure foundations are designed and located appropriately to reduce the potential for lateral spreading. Furthermore, building and grading plans would be developed in accordance with all County building and grading requirements and submitted for County approval prior to issuance of a building permit and/or a grading permit as required by Mitigation Measure MM 3.6-1. With implementation of CBC and the requirements of the County's Codified Ordinances that would be verified by the County Building and Safety Department, and implementation of Mitigation Measure MM 3.6-1, impacts related to unstable soils would be less than significant.

Mitigation Measure

MM 3.6-1 *(Provided previously under Impact 3.6-1)*

Impact 3.6-5: Would the project site have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal system where sewers are not available for the disposal of wastewater?

Less than Significant Impact with Mitigation Incorporated. The project proposes the installation of onsite wastewater treatment systems on each residential lot that would utilize landscaping areas to dispose of treated wastewater. The onsite wastewater treatment systems installed on each lot would consist of three components: (1) a 1,500-gallon septic tank; (2) three modular peat fiber biofilters; and (3) a 300-gallon water reuse pump station. After receiving primary treatment from the septic tank and secondary treatment from the biofiltration system, effluent would be pumped by the reuse water pump station to subsurface dispersal irrigation areas to irrigate portions of Fuel Modification Zone B area. The irrigation landscaping areas have been designed to provide the irrigation needs of the plants, while using all the effluent that would be generated by the project. Irrigation would be supplemented when necessary by an irrigation system that is linked to weather-monitoring controllers.

The septic tank, biofiltration system, and subsurface drip irrigation fields would be located in soil with suitable characteristics, and percolation testing at each septic tank location is required during project construction pursuant to the Orange County On-Site Sewage Absorption System Guidelines to ensure the suitability for the proposed onsite wastewater treatment systems. Mitigation Measure MM 3.6-2, requires the project to be designed in accordance with the Orange County On-site Sewage Absorption System Guidelines and SWRCB On-Site Wastewater Treatment System Policy (Policy), which details siting, design and construction standards for system installation, expected performance, and maintenance requirements. The wastewater systems would be designed in accordance with Tier 2 requirements of the Policy, which means that siting and approval of the systems would be overseen by the Orange County Department of Public Works. In addition, the Orange County On-Site Sewage Absorption System Guidelines require the project operator to perform soil percolation tests at each specific proposed onsite wastewater treatment system location prior to permit approval to ensure appropriate soil suitability.

Through compliance with the SWRCB Water Quality Control Policy for Siting, Design, Operation, and Maintenance of On-site Wastewater Treatment Systems, RWQCB adopted Guidelines for New Community and Individual Sewerage Facilities, and Orange County Sewage Absorption System Guidelines and Wastewater Treatment and Disposal System Regulations (Mitigation Measure MM 3.6-2), which would be required to be implemented prior to receipt of operating permits, onsite wastewater treatment systems would be properly installed and maintained. This requires components of the onsite wastewater treatment system to be setback a minimum of five feet from structures, property lines, and the top of descending slopes to ensure appropriate function; and appropriate setbacks from streams and other features per the County Regulations for Wastewater Treatment and Disposal Systems. In addition, per Mitigation Measure MM 3.6-3, the HOA would be required to educate residents about the proper use and maintenance of septic systems, and would provide a list of septic service companies approved by the HOA to prevent damage and failure. The septic tanks would also be emptied of sludge regularly and transported to disposal by a County-registered and HOA approved waste hauler. Overall, compliance with existing regulations as implemented in Mitigation Measure MM 3.6-2 would reduce potential impacts related to soils and the use of septic tanks to a less than significant level.

Mitigation Measures

MM 3.6-2 The project operator shall design and operate the onsite wastewater treatment systems in accordance with the SWRCB adopted Resolution No. 2012-0032—the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of On-site Wastewater Treatment Systems (specifically Tier 2 of this Policy requiring Orange County Department of Public Works to oversee the design and approval of the systems); the Orange County On-site Sewage Absorption System Guidelines; and the County Regulations for Wastewater Treatment and Disposal Systems, which include minimum horizontal setback requirements from geologic and water features. All septic tanks, biofilters and reuse water pump station/emergency storage tanks shall be setback a minimum of five feet from structures, property lines and the top of descending slopes. The project operator shall obtain approval from the County for issuance of building permits for and operation of onsite wastewater treatment systems.

MM 3.6-3 The Home Owners Association (HOA) shall provide detailed information via flyers and meetings to project residents regarding the proper use and maintenance necessary to keep onsite wastewater treatment systems functioning properly. In addition, information regarding County-registered HOA approved liquid waste haulers shall be provided to project site residents.

3.6.5 Cumulative Impacts

The geographic scope for cumulative impact analysis related to geology and soils are generally contained to the project site. The closest cumulative project is located approximately 2.4 miles from the project site in the City of Lake Elsinore. Thus, cumulative projects are too distant for

soils related activities on the project site to be effected. In addition, and as described above, the project site is in a seismically active area, which is bordered by major fault systems including the Elsinore Fault and San Andreas Fault. All areas of Orange County are considered seismically active; therefore, all other projects within the County are subject to similar seismic hazards. This project and other planned projects in the vicinity would be subject to state building codes to increase stability during seismic events. Further, the project and other planned projects are development projects, would not involve any subsurface activities that could increase the seismicity of surrounding areas. As a result, cumulative impacts related to seismicity would be less than significant.

In addition, most projects are required to implement site-specific SWPPPs and WQMPs, which would reduce soil erosion potential on each project site during construction and operation, which would reduce the potential for projects, such as the proposed project, to combine and result in cumulatively considerable impacts.

Furthermore, the onsite wastewater treatment systems proposed by the project are subject to state and County septic requirements and would be completely contained within the project site; thus, would not cumulatively affect other projects. Overall, project impacts related to geology and soils would be less than cumulatively considerable, and less than significant.

3.7 Greenhouse Gas Emissions

This section provides a discussion of greenhouse gas (GHG) emissions, existing regulations pertaining to GHGs, and quantification of GHG emissions that would result from construction and operation of the proposed project. The methods of analyzing emissions described in this section are consistent with the recommendations of the South Coast Air Quality Management District (SCAQMD). GHG modeling calculations are provided in Appendix E of this EIR.

3.7.1 Environmental Setting

Existing Conditions

GHG Emissions Overview

Various gases in the earth's atmosphere, classified as GHGs, play a critical role in determining its surface temperature. Solar radiation enters earth's atmosphere from space, and a portion of the radiation is absorbed by the earth's surface. Earth re-radiates this energy back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation (that otherwise would have escaped back into space) is now retained in the atmosphere, and results in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Much of the scientific literature suggests that human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of earth's climate, known as global climate change or global warming. While there is some debate regarding this issue, it is unlikely that global climate change of the past 50 years can be explained without contribution from human activities (IPCC, 2007).

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within one year, whereas the remaining 46 percent of human-caused CO_2 emissions remains stored in the atmosphere (Seinfeld and Pandis, 1998).

Similarly, impacts of GHGs are global, as opposed to localized air quality effects of criteria air pollutants and toxic air contaminants. The quantity of GHGs that it takes to ultimately result in

climate change is not precisely known; however, it is clear that the quantity is enormous, and no single development project would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative (SMAQMD, 2009).

Greenhouse Gas Emission Sources

According to much of the scientific literature on this topic, emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors (CARB, 2014a). Currently in California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (CARB, 2014a). Emissions of CO_2 are byproducts of fossil fuel combustion. Methane (CH_4), a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. NO_2 is also largely attributable to agricultural practices and soil management. Carbon dioxide sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution, respectively, two of the most common processes of CO_2 sequestration.

California is the 12th to 16th largest emitter of CO_2 in the world (CEC, 2006a). California produced approximately 459 million gross metric tons of CO_2 equivalent (CO_2e) in 20121 (CARB, 2014a). CO_2e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. Expressing emissions in CO_2e takes the contributions to the greenhouse effect of all GHG emissions and converts them to the equivalent effect that would occur if only CO_2 were being emitted. This measurement, known as the global warming potential (GWP) of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, as described in Appendix B of the Calculation References of the General Reporting Protocol of the California Climate Action Registry, one ton of methane (CH_4) has the same contribution to the greenhouse effect as approximately 21 tons of CO_2 (CCAR, 2009). Therefore, methane (CH_4) is a much more potent GHG than CO_2.

Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2012, accounting for 36 percent of total GHG emissions in the state (CARB, 2014a). This sector was followed by the electric power sector (including both in-state and out-of-state sources) (21 percent) and the industrial sector (19 percent) (CARB, 2014a).

Regulatory Setting

Federal Clean Air Act

The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (USEPA) to define national ambient air quality standards to protect public health and welfare in the U.S. The CAA does not specifically regulate GHG emissions; however, on April 2, 2007 the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency*, 549 U.S. 497 (2007) determined that GHGs are pollutants that can be regulated under the CAA. Currently, there are no federal regulations that establish ambient air quality standards for GHGs.

On December 7, 2009, USEPA adopted its Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CAA (Endangerment Finding). The Endangerment Finding is based on Section 202(a) of the CAA, which states that the administrator (of USEPA) should regulate and develop standards for "emission[s] of air pollution from any class or classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The rule addresses Section 202(a) in two distinct findings. The first addresses whether the concentrations of the six key GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations. The second addresses whether the combined emissions of GHGs from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of GHGs and, therefore, contribute to the threat of climate change.

The USEPA Administrator found that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the CAA. The evidence supporting this finding consists of human activity resulting in "high atmospheric levels" of GHG emissions, which are likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wildfires, droughts, sea level rise, and higher intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations.

The USEPA administrator also found that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. USEPA's final findings respond to the 2007 U.S. Supreme Court decision that GHGs fit within the CAA definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but, rather, allow USEPA to finalize the GHG standards proposed earlier in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation. Specific GHG regulations that the USEPA has adopted include:

40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule. This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2e emissions per year. Additionally, reporting of emissions is required for owners of SF_6- and PFC-insulated equipment when the total nameplate capacity of these insulating gases is above 17,280 pounds.

40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule. This rule sets GHG emissions thresholds that define when permits under the USEPA's New Source Review Prevention Significant Deterioration (PSD) and Title V Operating Permit programs would be required for new and existing industrial facilities. The first step of the USEPA's tailoring rule, which took effect Jan. 2, 2011, required sources that to obtain permits for their GHG emissions if they emit 75,000 tons of CO_2e per year. Beginning July 1, 2011, the second phase applied permitting requirements to all stationary sources with GHG emissions of at least 100,000 tons of CO_2e annually or that made modifications increasing their emissions by at least 75,000 tons per year. The requirements applied to sources even if they were not previously subject to permitting for other pollutants.

Assembly Bill 1493 (Pavley)

In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493 (Pavley, Chapter 200, California Statues of 2002; codified in California Health and Safety Code Section 42823, 43018.5). AB 1493 requires that CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." In 2004 CARB approved amendments to the California Code of Regulations (CCR) adding GHG emissions standards to California's existing standards for motor vehicle emissions that require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily for the transportation of persons), beginning with the 2009 model year.

On September 15, 2009, USEPA and the Department of Transportation's National Highway Safety Administration (NHTSA) proposed a National Program to reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States. The combined USEPA and NHTSA standards that make up the proposed National Program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon (mpg). In December 2011, NHTSA and USEPA issued a joint proposal to extend the National Program to further improve fuel economy and reduce GHG emissions for passenger and light-duty vehicles for model years 2017–2025. This would be accomplished through new proposed Corporate Average Fuel Economy (CAFE) standards by NHTSA and new GHG emission standards by USEPA. The proposed CAFE standards are projected to require, on an average industry-fleet-wide basis for cars and trucks combined, 40.1 mpg in model year 2021, and 49.6 mpg in model year 2025. USEPA's proposed GHG standards, which would be harmonized with NHTSA's CAFE standards, are projected to require 163 grams/mile (54.5 mpg) of CO_2 in model year 2025.

Executive Order S-3-05

Executive Order S-03-05, which was signed by Governor Schwarzenegger in 2005, established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the Secretary of California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the Secretary of CalEPA created the California Climate Action Team (CCAT) to achieve the targets by building on voluntary actions of California businesses, local government, and community actions, as well as through state incentive and regulatory programs.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable

reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. According to CARB's Scoping Plan, the 2020 target of 427 million metric tons (MMT) of CO_2e requires the reduction of 169 $MMTCO_2e$, or approximately 28.4 percent, from the state's projected 2020 business-as-usual (BAU) emissions level of 596 $MMTCO_2e$.[1] However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. In August 2011, the Scoping Plan was re-approved by the Board and includes the Final Supplement to the Scoping Plan Functional Equivalent Document. This document includes expanded analysis of project alternatives as well as updates the 2020 emission projections in light of the current economic forecasts. Considering the updated 2020 BAU estimate of 507 $MMTCO_2e$, a 16 percent reduction below the estimated BAU levels would be necessary to return to 1990 levels by 2020. The document also excludes one measure identified in the 2008 Scoping Plan that has been adopted and one measure that is no longer under consideration by CARB (CARB, 2011).

As required by AB 32, the Scoping Plan must be updated at least every five years to evaluate the mix of AB 32 policies to ensure that California is on track to meet the targets set out in the legislation. As such, a draft Update to the initial Scoping Plan was developed by CARB in collaboration with the CCAT and was presented to CARB's Board for discussion at its February 20, 2014 meeting. The draft Update builds upon the initial Scoping Plan with new strategies and expanded measures, and identifies opportunities to leverage existing and new funds to drive GHG emission reductions through strategic planning and targeted program investments. The first update to the AB 32 Scoping Plan was approved on May 22, 2014 by CARB (CARB, 2014b).

Executive Order S-1-07

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs

[1] BAU is defined as emissions that would be generated prior to AB 32-related emission restrictions beginning in 2006.

CARB to determine whether this low carbon fuel standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the LCFS. The LCFS will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. One standard is established for gasoline and the alternative fuels that can replace it. A second similar standard is set for diesel fuel and its replacements.

The issuance of regulations by California under the LCFS has resulted in several lawsuits that were brought on by industry trade organizations representing ethanol producers, refiners, and truckers. These lawsuits allege that California acted in violation of the U.S. Constitution because the LCFS are inherently discriminatory against commerce taking place outside of the state of California, since more carbon emissions would always result from the transportation of fuels to California from areas outside of the state when compared to the carbon emissions generated by fuel producers in California who would be able to transport their fuel over shorter distances. In addition, the lawsuit also alleged that California was making an attempt to impermissibly regulate conduct outside of the state and contended that California's LCFS should be preempted by the Renewable Fuel Standards passed on the federal level. In response, the state has indicated that the provisions found within the CCAA provide the authority for California to control air pollution and that its regulation is a permissible act of state sovereignty. Nonetheless, a federal judge issued a preliminary injunction in December 2011 that prevented California from implementing the LCFS on the grounds that California's regulations were in violation of the Commerce Clause in the United States Constitution. CARB appealed the decision and has been allowed to implement the LCFS while the appeal is pending. On September 18, 2013, the Ninth Circuit Court of Appeals reversed the U.S. District Court opinion that held that California's LCFS violated the dormant Commerce Clause of the U.S. Constitution.

Senate Bills 1078 and 107 and Executive Order S-14-08

SB 1078 (Chapter 516, Statutes of 2002; Section 399.15) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006; PRC Section 25740) changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewables Energy Standard to 33 percent renewable power by 2020. In April 2011, Governor Jerry Brown signed SB 2X, that created a legislative mandate codifying the 33 percent Renewables Portfolio Standard into law.

Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008; PRC Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, 65080.01 21061.3, and 21159.28), aligns regional transportation planning efforts, regional GHG reduction targets, and

land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan (RTP). CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meet certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

On April 4, 2012, the Regional Council of the Southern California Association of Governments (SCAG), which is the MPO in Southern California, adopted the *2012-2035 Regional RTP/SCS: Towards a Sustainable Future*. The RTP/SCS is the culmination of a multi-year effort involving stakeholders from across the SCAG region, which contains six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 191 cities in Southern California.

CARB Climate Change Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations and through the recommended actions. **Table 3.7-1** shows the Recommended Actions contained in Appendices C and E of CARB's Scoping Plan (CARB, 2008).

TABLE 3.7-1
RECOMMENDED ACTIONS FROM CARB CLIMATE CHANGE SCOPING PLAN

ID #	Sector	Strategy Name
T-1	Transportation	Pavley I and II – Light-Duty Vehicle GHG Standards
T-2	Transportation	LCFS (Discrete Early Action)
T-3	Transportation	Regional Transportation-Related GHG Targets
T-4	Transportation	Vehicle Efficiency Measures
T-5	Transportation	Ship Electrification at Ports (Discrete Early Action)
T-6	Transportation	Goods-movement Efficiency Measures
T-7	Transportation	Heavy Duty Vehicle GHG Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)
T-8	Transportation	Medium and Heavy-Duty Vehicle Hybridization
T-9	Transportation	High Speed Rail
E-1	Electricity and Natural Gas	Increased Utility Energy efficiency programs More stringent Building and Appliance Standards
E-2	Electricity and Natural Gas	Increase Combined Heat and Power Use by 30,000GWh
E-3	Electricity and Natural Gas	Renewables Portfolio Standard

ID #	Sector	Strategy Name
E-4	Electricity and Natural Gas	Million Solar Roofs
CR-1	Electricity and Natural Gas	Energy Efficiency
CR-2	Electricity and Natural Gas	Solar Water Heating
GB-1	Green Buildings	Green Buildings
W-1	Water	Water Use Efficiency
W-2	Water	Water Recycling
W-3	Water	Water System Energy Efficiency
W-4	Water	Reuse Urban Runoff
W-5	Water	Increase Renewable Energy Production
W-6	Water	Public Goods Charge (Water)
I-1	Industry	Energy Efficiency and Co-benefits Audits for Large Industrial Sources
I-2	Industry	Oil and Gas Extraction GHG Emission Reduction
I-3	Industry	GHG Leak Reduction from Oil and Gas Transmission
I-4	Industry	Refinery Flare Recovery Process Improvements
I-5	Industry	Removal of methane (CH_4) Exemption from Existing Refinery Regulations
RW-1	Recycling and Waste Management	Landfill methane (CH_4) Control (Discrete Early Action)
RW-2	Recycling and Waste Management	Additional Reductions in Landfill methane (CH_4) – Capture Improvements
RW-3	Recycling and Waste Management	High Recycling/Zero Waste
F-1	Forestry	Sustainable Forest Target
H-1	High GWP Gases	Motor Vehicle Air Conditioning Systems (Discrete Early Action)
H-2	High GWP Gases	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)
H-3	High GWP Gases	Reduction in Perfluorocarbons in Semiconductor Manufacturing (Discrete Early Action)
H-4	High GWP Gases	Limit High GWP Use in Consumer Products (Discrete Early Action, Adopted June 2008)
H-5	High GWP Gases	High GWP Reductions from Mobile Sources
H-6	High GWP Gases	High GWP Reductions from Stationary Sources
H-7[a]	High GWP Gases	Mitigation Fee on High GWP Gases
A-1	Agriculture	Methane (CH_4) Capture at Large Dairies

[a] This original measure in the 2008 Scoping Plan was subsequently excluded by CARB in the Final Supplement to the Scoping Plan Functional Equivalent Document in 2011, as CARB staff concluded that implementation of this measure would not be feasible.
Source: CARB, 2008.

An Update to the initial Scoping Plan was approved on May 22, 2014 by CARB to address the requirement by AB 32 that the Scoping Plan be updated at least every five years. The Update builds upon the initial Scoping Plan with new strategies and expanded measures, and identifies opportunities to leverage existing and new funds to drive GHG emission reductions through strategic planning and targeted program investments. As part of the update to the Scoping Plan, the emissions reductions required to meet the 2020 statewide GHG emissions limit were adjusted, which determined that a 15 percent reduction below the estimated BAU levels is necessary to return to 1990 levels by 2020 (CARB, 2014b).

Executive Order B-30-15 – 2030 Statewide Emission Reduction Target

Executive Order B-30-15 was signed by Governor Jerry Brown on April 29, 2015, establishing an interim statewide GHG reduction target of 40 percent below 1990 levels by 2030, which is necessary to guide regulatory policy and investments in California in the midterm, and put

California on the most cost-effective path for long-term emission reductions. Under this Executive Order, all state agencies with jurisdiction over sources of greenhouse gas emissions are required to continue to develop and implement emissions reduction programs to reach the state's 2050 target and attain a level of emissions necessary to avoid dangerous climate change. According to the Governor's Office, this Executive Order is in line with the scientifically established levels needed in the United States to limit global warming below 2°C - the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels.

Clean Energy Reduction Act

Clean Energy and Pollution Reduction Act of 2015, Senate Bill (SB) 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 will (1) increase standards by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that would achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provide for the evolution of the Independent System Operator (ISO) into a regional organization; and (4) require the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. This Act is intended to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation (Brown, 2015).

California Building Standards Code (Title 24) and California Energy Code (Part 6)

California's Building Energy Efficiency Standards for Residential and Nonresidential Buildings, located at Title 24, Part 6, of the California Code of Regulations, is commonly known as the "Title 24" standards, the standards are typically updated every three years; the 2013 standards were effective on July 1, 2014. Title 24 provides energy efficiency standards for residential and non-residential development with the express goal of "reducing of wasteful, uneconomic, inefficient or unnecessary consumption of energy." (Public Resources Code Section 25402.) Updated standards take effect January 1, 2017.

California Green Buildings Standards

The California Green Building Standards (CALGreen) are located in Title 24, Part 11 of the California Code of Regulations. The purpose of the CALGreen Code is to enhance the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. The code provides a various mandatory and voluntary measures to be enforced on new building construction. The CALGreen Code, which became effective on January 1, 2014 was anticipated to reduce 3 MMT of GHG emissions by 2020, reduce water use by 20 percent or more, and divert 50 percent of construction waste from landfills. The California Green Building Standards Code was most recently updated in 2016 to

include new mandatory measures for residential as well as nonresidential uses; the new measures take effect on January 1, 2017.

County of Orange General Plan

The County's General Plan does not include any specific goals and objectives related to GHGs.

3.7.2 Thresholds of Significance

According to Appendix G of the *CEQA Guidelines* and the County of Orange Environmental Analysis Checklist, a project could have a significant adverse effect on GHG emissions if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The analysis methodologies from SCAQMD are used in evaluating potential impacts related to GHG from implementation of the proposed project. SCAQMD provides a tiered approach to evaluate GHG impacts, which includes:

- Tier 1: determine whether or not the project qualifies for any applicable exemption under CEQA
- Tier 2: determine whether the project is consistent with a greenhouse gas reduction plan, which would mean that it does not have significant greenhouse gas emissions.
- Tier 3: determine if the project would be below screening values; if a project's GHG emissions are under one of the following screening thresholds, then the project is less than significant:
    - All land use types: 3,000 MTCO2e per year
    - Residential: 3,500 MTCO2e per year
    - Commercial: 1,400 MTCO2e per year
    - Mixed use: 3,000 MTCO2e per year

SCAQMD also recommends that construction GHG emissions be amortized over a 30-year period and added to its operational emission estimates to determine if the project would exceed the screening values listed above (SCAQMD, 2008).

Thus, based on the SCAQMD methodologies, the proposed residential uses would result in less than significant impacts if they generate less than 3,500 MTCO2e per year, including construction emissions averaged over a 30-year period and added to the modeled annual operational emissions.

3.7.3 Methodology

Construction-related GHG emissions were estimated using a similar methodology to that described for criteria air pollutants in Section 3.3, *Air Quality*, of this EIR. SCAQMD recommends the use of the California Emissions Estimator Model (CalEEMod) for estimating construction and operational emissions associated with land use projects. CalEEMod estimates the emissions of CO_2, methane (CH_4), and nitrous oxide (N_2O) as well as the resulting total CO_2e emissions associated with construction-related GHG sources such as off-road construction equipment, material delivery trucks, soil haul trucks, and construction worker vehicles. As CalEEMod uses IPCC's 1996 SAR to assign the GWPs for methane (CH_4) and nitrous oxide (N_2O), the emissions for these two GHGs were taken from the CalEEMod outputs and converted to CO_2e emissions outside of CalEEMod using the updated GWPs from IPCC's AR4.

Operational emissions of GHGs, including GHGs generated by direct and indirect sources, are estimated according to the recommended methodologies from SCAQMD. Direct sources include emissions such as vehicle trips, natural gas consumption, and landscape maintenance. Indirect sources include off-site emissions occurring as a result of the project's operations such as electricity and water consumption and solid waste disposal. The direct and indirect emissions generated during the proposed project's operations were estimated using CalEEMod. Similar to the calculation of the project's construction-related GHG emissions, the operational emissions of methane (CH_4) and nitrous oxide (N_2O) were extracted from the CalEEMod output file and converted to CO_2e emissions using the GWPs from IPCC's AR4. Modeling was based on project-specific data (e.g., size and type of proposed uses, use of septic systems on-site, etc.) and vehicle trip information from the traffic analysis prepared for the project (Urban Crossroads, 2014; see Appendix J of this EIR).

CalEEMod estimates energy use from residential land uses based on the Residential Appliance Saturation Survey reported by CEC, which is a comprehensive energy use assessment that includes the end use for various climate zones in California. Emissions from energy use are estimated based on USEPA's *Compilation of Air Pollutant Emission Factors* (AP-42) emission factors and the California Climate Action Registry's General Reporting Protocol. Water consumption data was obtained from Table ES-1 of the Pacific Institute's "Waste Not Want Not" report (Pacific Institute, 2003). Electricity intensity factors were obtained from the 2006 CEC report, "Refining Estimates of Water-Related Energy Use in California" (CEC, 2006b). CalEEMod calculates the indirect GHG emissions associated with solid waste that is disposed of at a landfill. The program uses annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecyle) data for individual land uses. The program quantifies the GHG emissions associated with the decomposition of the waste which generates methane based on the total amount of degradable organic carbon. Default landfill gas concentrations are used as reported in Section 2.4 of AP-42. Additionally, wastewater generated by the development would also produce GHG emissions. For the proposed project, wastewater would be treated by an on-site wastewater system. GHG emissions associated with the use of septic systems are quantified by CalEEMod based on CARB's Local Government Operations Protocol (LGOP), which in turn are based on USEPA methodologies (SCAQMD, 2013).

3.7.4 Project Impacts

Impact 3.7.1: Would the project generate significant amounts of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact.

Construction Emissions

The proposed project consists of the construction of 72 single-family residential units. Construction-related GHG emissions were estimated using the same assumptions and methodology as the air quality analysis included in Section 3.3, *Air Quality*, of this EIR. As shown in **Table 3.7-2**, the total GHG emissions that are anticipated during construction of the proposed project at Phase 1 (south parcel) and Phase 2 (north parcel) would be approximately 1,403 $MTCO_2e$ (detailed GHG modeling data is provided in Appendix E).

TABLE 3.7-2
ESTIMATED PROJECT CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS

Emission Source	Estimated CO_2e Emissions[a]
Construction	
Phase 1 (south parcel)	805 (MT)
Phase 2 (north parcel)	598 (MT)
Total	1,403 (MT)
Annual Construction (Amortized over 30 years)	**47 (MT/yr)**

Source: 2016 CalEEMOD modeling, Entech Consulting, see Appendix E for model output.
Notes: CO_2e= carbon dioxide equivalent; MT =metric tons; MT/yr = metric tons per year.

This would equal to approximately 47 $MTCO_2e$ per year after amortization over 30 years per SCAQMD methodology.

Operational Emissions

Area and indirect sources associated with the proposed project would primarily result from electricity and natural gas consumption, water transport (the energy used to pump water to and from the project site, respectively), wastewater treatment by on-site septic systems, and solid waste generation. GHG emissions from electricity consumed on the site would be generated off-site by fuel combustion at the electricity provider. GHG emissions from water transport are also indirect emissions resulting from the energy required to transport water from its source. In addition, the residential uses at the project site would also generate mobile source emissions from motor vehicle trips generated by residents and visitors.

As discussed previously, for the purpose of analyzing the project's impact associated with the generation of GHG emissions, the threshold for determining significance is based upon SCAQMD's recommended methodologies and thresholds for residential uses. The various operational GHG emissions associated with the proposed project are listed in **Table 3.7-3**. As recommended by SCAQMD, the project's annual amortized construction GHG emissions (from **Table 3.7-2**) were added to the project's operational GHG emissions to assess the project's total GHG emissions impacts (detailed GHG modeling data is provided in Appendix E).

TABLE 3.7-3
ESTIMATED CONSTRUCTION AND OPERATIONS-RELATED GREENHOUSE GAS EMISSIONS

Emission Source	Estimated Emissions CO_2e (MT/yr)
Construction	
Annual Construction (Amortized over 30 years)	47
Operations	
Mobile Sources	1,102
Energy Consumption[a]	318
Water Consumption[a]	444
Solid Waste	43
Area Source	19
Total Operational Emissions	1,925
Total (Construction and Operational Emissions)	**1,972**

Notes: CO_2e= carbon dioxide equivalent; MT/yr = metric tons per year; see Appendix E of this EIR for CalEEMod model output.
Source: 2016 CalEEMOD modeling, Entech Consulting, see Appendix E for model output.
[a] GHG emissions reductions associated with Title 24 standards and water use resulting from compliance with CALGreen requirements were accounted for in CalEEMod model run.

As shown in **Table 3.7-3**, the proposed project's total annual GHG emissions resulting from construction and operational activities would be 1,972 $MTCO_2e$ per year. Thus, the project's GHG emissions would be below the 3,500 MTCO2e per year threshold.

In addition, although not factored into the emissions calculations shown in **Table 3.7-3**, the Project Design Features integrated into the project would further reduce GHG emissions generated at the project site.[2] In particular, the provision of landscaping (Project Design Feature PDF-4) would assist in carbon intake (as opposed to implementing all hardscape at the project site), while revegetation of new slope areas with drought tolerant species (Project Design Feature PDF-4) and use of grey water for landscape irrigation would reduce the amount of watering required at the project site, which indirectly reduces GHG emissions associated with both water and wastewater transport to/from the project site. Nonetheless, even without taking these project design features into consideration, the project's GHG would be below the SCAQMD's recommended thresholds for residential uses; therefore, impacts from project GHG emissions would be less than significant.

Impact 3.7.2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. The proposed project would comply with state and federal programs that are designed to improve energy efficiency and would provide new residential uses in a sustainable manner. The proposed project would comply with all mandatory measures under

[2] The additional GHG emissions reductions beyond those shown in Table 3.7-3 from implementation of the project design features were not quantified as no specific percentage reduction in water consumption amounts have been determined from these features.

the California Title 24, California Energy Code, and the CALGreen Code, which would provide efficient energy and water consumption.

In addition, the CARB Scoping Plan provides strategies to reduce GHG emissions that are applicable to the proposed project. The County assists in implementation of the Scoping Plan measures by reviewing projects for compliance with SCAQMD GHG thresholds, and Title 24 standards that help reduce GHG emissions through increasing energy efficiency of new residential and nonresidential buildings. The 2016 update to the Building Energy Efficiency Standards that is effective January 1, 2017 would result in greater energy efficiencies when compared to the current Title 24 Standards and focuses on several key areas to improve the energy efficiency of buildings that include improvements for attics, walls, water heating, and lighting. The proposed residences would be developed in compliance with 2016 Title 24 standards, which would be verified by the County's Building and Safety Department during the permitting process.

In addition, the project includes the following Project Design Feature PDF-1 that would preserve 414.6 acres of open space and PDF-4 that would assist in carbon intake and utilize drought tolerant species, that are consistent with existing plans, policies, and regulations adopted for the purpose of reducing the emissions of greenhouse gases.

Emissions from vehicles, which are the main source of operational GHG emissions associated with the project, would be reduced through implementation of the state Pavley standards, the state LCFS, and the federal CAFE standards. As discussed above, Executive Order S-01-07 established the goals of reducing carbon intensity in fuels by 10 percent by the year 2020 and establishing a LCFS for California. In addition, Executive Order B-30-15 established a statewide GHG reduction target of 40 percent below 1990 levels by 2030.

Overall, implementation of the proposed project would not conflict with existing plans, policies, and regulations adopted for the purpose of reducing the emissions of greenhouse gases. Additionally, the GHG emissions generated from the proposed project would be below the SCAQMD recommended threshold. Therefore, the proposed project would not conflict with any applicable plan, program, policy, or regulation related to the reduction of GHG emissions, and impacts would be less than significant.

3.7.5 Cumulative Impacts

As described above, the California Air Pollution Control Officers Association's (CAPCOA) *CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* document determined that GHG impacts are exclusively cumulative impacts; and there are no non-cumulative GHG emission impacts from a climate change perspective. As such, impacts of the project's GHG emissions that are described above are cumulative.

As shown in **Table 3.7-3**, the proposed project's total annual GHG emissions resulting from construction and operational activities would be 1,972 MTCO2e per year. Thus, the project's

GHG emissions would be below the 3,500 MTCO2e per year threshold and impacts related to GHG emissions would be less than significant.

3.8 Hazards and Hazardous Materials

This section describes the potential adverse impacts on human health and the environment from hazards that could result from the project during construction and operation. The analysis also includes hazards associated with any historic contamination on-site, and the project location relative to wildland fire risks. An overview of the regulatory framework related to hazardous materials and high fire hazard areas is followed by an analysis of potential impacts and mitigation measures, if applicable, necessary to reduce impacts to less than significant levels. The following analysis is based on various resources including the Phase 1 Environmental Site Assessment Reports for both phases (Arcadis 2016), the Fire Behavior Analysis Report, Fire Master Plan, and Fuel Modification Plan, which are provided in Appendix F and Appendix G of this EIR, respectively.

3.8.1 Environmental Setting

Existing Conditions

Phase 1 (south parcel) consists of gently sloping terrain in the southern portion of the parcel, to steep rugged terrain in the northern portion of the parcel. The majority of Phase 1 (south parcel) is undisturbed and supports dense chaparral habitat, as well as scattered patches of oak woodland. Disturbance is limited to a network of dirt roads and trails.

Phase 2 (north parcel) consists of gently sloping terrain in the northeast portion of the parcel to steep, rugged terrain in the remainder of the parcel. Elevations range from 2,020 to 3,040 feet amsl. The majority of the parcel is undisturbed and supports dense chaparral habitat with large rock outcroppings and large areas of oak woodland. Existing disturbance areas are limited to a network of dirt roads and trails throughout the parcel, and a currently occupied residence in the southwest corner of Phase 2 (north parcel) that would be vacant by the time that project construction would commence. One residence is located just east of the boundary of Phase 2 (north parcel).

In addition, the southern portion of the Phase 2 (north parcel) contains the previously used McConville Airstrip (FAA Identifier CA42) (see Figure 2-2). The private airstrip was developed in the late 1960s / early 1970s, is approximately 1,000 feet long, unpaved, and lies in a northeast to southwest direction on a slope. The private airstrip was previously used for training of landing small aircraft in rural areas; however, the airstrip has not been used since at least 2003, and cannot be used without permission from the landowner (https://www.airnav.com/airport/CA42). Several abandoned structures (such as a storage shed, hangar/maintenance structure, and bunker) that were used for the airstrip are also located in this portion of the site. The airstrip portion of Phase 2 (north parcel) receives electricity service and there are two active water wells and water storage tanks onsite.

Hazardous Materials Concerns

The project site is generally vacant and undeveloped. A Phase 1 Environmental Site Assessment Report (Arcadis 2016) was prepared in August 2016 to identify any potentially hazardous materials exist on the site, which is included as Appendix F of this EIR. The Phase 1 reviewed

regulatory database lists to identify any leaking underground storage tanks (USTs), aboveground storage tanks (ASTs), hazardous waste sites, and abandoned hazardous materials sites on or near the project site. The project site was not listed on any of the regulatory databases (Arcadis 2016).

The Phase 1 included a site visit on August 31, 2016, which identified that the Phase 1 (south parcel) has some non-hazardous debris and wood pallets; however, no hazardous substances or materials were identified.

The Phase 2 (north parcel) was found to contain a hangar/maintenance structure and a small storage shed near the southern end of the airstrip. The hangar contained multiple 55-gallon drums (most of them empty) and smaller size containers of various oils, lubricants, sprays, a propane canister, etc. (Arcadis 2016). There are also tools and various pieces of small equipment in the hangar. The floor of the hangar consisted of soil; and minor surficial staining was observed beneath some of the stored containers (Arcadis 2016). The interior of the shed also contained numerous containers of oils, gasoline cans, paints, spray paints, and many unlabeled containers (contents unknown). Several batteries were observed on the ground outside the shed (Arcadis 2016). The Phase 1 also identified a small bunker located near the western boundary of Phase 2 (north parcel) that formerly contained dynamite. Dynamite releases perchlorate, a hazardous compound, to the environment.

In addition, several areas within Phase 2 (north parcel) are being used to store numerous dilapidated vehicles that contain motor vehicle fluids (Arcadis 2016). Also, in proximity to the areas of stored cars, the Phase 1 Report identified numerous debris piles that contained metal and wood pieces, 55-gallon drums (most of them empty), tires, small pieces of equipment, glass, pails and buckets (some containing unknown substances), piping, etc.

The Phase 2 (north parcel) also contains two trash pits. Trash that was generated at a camp to the west of the project site, was burned within two unlined pits onsite near the entrance to Phase 2 (north parcel). The pits were used up until the 1950s or 1960s. They are currently covered over by soil and vegetation, and their exact location is unknown (Arcadis 2016).

Wildland Fires Concern

The Cleveland National Forest and private holdings within the forest are subject to wildland fires due to steep terrain, highly flammable chaparral vegetation of the Santa Ana Mountains, and the Santa Ana winds that occur during seasonal dry periods. According to the Orange County Public Safety Map, the project site is located within a high fire hazard zone, and is designated as a Very High Fire Hazard Severity Zone by the Orange County Fire Authority (OCFA), and within a County designated Special Fire Protection Area (SFPA) (OCFA, 2016). In fire hazard zones, the OCFA requires implementation and maintenance of detailed fuel modification programs.

In 1989, the Ortega Fire, which consumed a total of 7,880 acres in the area, burned the southern portion of the project site. In addition, on September 23, 2010, a fire burned adjacent to the project site along Long Canyon Road. This fire started during fuel abatement work by the forest service along the roadway. It burned upslope and away from the project site.

Regulatory Setting

Federal

Primary federal agencies with responsibility for hazardous materials management include United States Environmental Protection Agency (USEPA), Department of Labor Occupational Health and Safety Administration (OSHA), and Department of Transportation (DOT).

Resource Conservation and Recovery Act of 1976

Federal hazardous waste regulations are generally promulgated under the Resource Conservation and Recovery Act (RCRA). Pursuant to RCRA, the USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in a "cradle to grave" manner. RCRA was designed to protect human health and the environment, reduce/eliminate the generation of hazardous waste, and conserve energy and natural resources.

The Hazardous and Solid Waste Amendments of 1984 both expanded the scope of RCRA and increased the level of detail in many of its provisions, reaffirming the regulation from generation to disposal and to prohibiting the use of certain techniques for hazardous waste disposal. The USEPA has largely delegated responsibility for implementing the RCRA program to the State of California, which implements this program through the California Hazardous Waste Control Act (described below under state regulations).

RCRA regulates landfill siting, design, operation, and closure (including identifying liner and capping requirements) for licensed landfills. In California, RCRA landfill requirements are delegated to the California Department of Resources Recycling and Recovery (CalRecycle), which is discussed in detail below.

RCRA allows the USEPA to oversee the closure and post-closure of landfills. Additionally, the federal Safe Drinking Water Act, 40 CFR Part 141 gives the USEPA the power to establish water quality standards and beneficial uses for waters from below- or above-ground sources of contamination. Water quality standards are administered by the Regional Water Quality Control Board (RWQCB).

Emergency Planning and Community Right-to-Know Act of 1986

Through the Emergency Planning and Community Right-to-Know Act of 1986 (also known as Title III of Superfund), the USEPA also imposes requirements that hazardous materials are properly handled in order to prevent or mitigate risk to human or environmental health in the event of an accidental release.

Occupational Safety and Health Act of 1970

The Occupational Safety and Health Act of 1970 (amended), which is implemented by the U.S. Occupational Safety and Health Administration (OSHA) developed Code 29 of Federal Regulations (29 CFR), which requires special training of handlers of hazardous materials; notification to employees who work in the vicinity of hazardous materials; acquisition from the manufacturer of material safety data sheets (MSDS) that describe the proper use of hazardous materials; and training of employees to remediate any hazardous material accidental releases.

OSHA also establishes standards regarding safe exposure limits for chemicals to which construction workers may be exposed. Safety and Health Regulations for Construction (29 CFR 1926.65 Appendix C) contains requirements for construction activities, which include occupational health and environmental controls to protect worker health and safety. The guidelines describe the health and safety plan(s) that must be developed and implemented during construction, including associated training, protective equipment, evacuation plans, chains of command, and emergency response procedures.

Due to the existence of potentially hazardous materials within Phase 2 (north parcel), adherence to applicable hazard-specific OSHA standards would be required to maintain worker safety.

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act, which was enacted in 1975 and was amended and reauthorized in 1990, 1994, and 2005; and is administered by the Research and Special Programs Administration (RSPA) of the US Department of Transportation (USDOT). The Hazardous Materials Transportation Act provides USDOT with a broad mandate to regulate the transport of hazardous materials, with the purpose of adequately protecting against risk to life and property, which is inherent in the commercial transportation of hazardous materials. The Hazardous Materials Transportation Act governs the safe transportation of hazardous materials by all modes, excluding bulk transportation by water. The Research and Special Programs Administration carries out these responsibilities by prescribing regulations and managing a user-funded grant program for planning and training grants for states and Indian tribes. USDOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or are involved in any way with the manufacture or testing of hazardous materials packaging or containers. USDOT regulations pertaining to the actual movement govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing. Additionally, USDOT is responsible for developing curriculum to train for emergency response, and administers grants to states and Indian tribes for ensuring the proper training of emergency responders.

State

In the regulation of hazardous waste management, California law often mirrors or is more stringent than federal law. The California Environmental Protection Agency (CalEPA) and California Occupational Safety and Health Administration (CalOSHA) are the primary state agencies responsible for hazardous materials management. Additionally, the California Emergency Management Agency (CalEMA) administers the California Accidental Release Prevention (CalARP) program. The California Department of Toxic Substances Control (DTSC), which is a branch of CalEPA, regulates the generation, transportation, treatment, storage, and disposal hazardous waste, as well as the investigation and remediation of hazardous waste sites. The California DTSC program incorporates the provisions of both federal (RCRA) and state hazardous waste laws.

Hazardous Waste Control Act

The Hazardous Waste Control Act was passed in 1972 and established the California Hazardous Waste Control Program within the Department of Health Services. California's hazardous waste regulatory effort became the model for the federal Resource Conservation and Recovery Act (RCRA). California's program, however, was broader and more comprehensive than the federal system, regulating wastes and activities not covered by the federal program. California's Hazardous Waste Control Law was followed by emergency regulations in 1973 that clarified and defined the hazardous waste program, as follows:

- Included definitions of what was a waste and what was hazardous as well as what was necessary for appropriate handling, processing, and disposal of hazardous and extremely hazardous waste in a manner that would protect the public and wildlife from hazards to health and safety.
- The early regulations also established a tracking system for the handling and transportation of hazardous waste from the point of waste generation to the point of ultimate disposition, as well as a system of fees to cover the costs of operating the hazardous waste management program.
- Advancing the newly developing awareness of hazardous waste management issues, the program established a technical reference center, for public and private use, dealing with all aspects of hazardous waste management.

Title 8 of the California Code of Regulations, CalOSHA

CalOSHA administers federal occupational safety requirements and additional state requirements in accordance with California Code of Regulations Title 8. CalOSHA requires preparation of an Injury and Illness Prevention Program (IIPP), which is an employee safety program that provides inspections, procedures to correct unsafe conditions, employee training, and occupational safety communication. This program is administered via inspections by the local CalOSHA enforcement unit.

Title 22 of the California Code of Regulations and Hazardous Waste Control Law, Chapter 6.5

The Department of Toxic Substances Control regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle-to-grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment. CalEPA has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other Certified Unified Program Agencies.

Title 27 of the California Code of Regulations, Solid Waste

Title 27 of the California Code of Regulations contains a waste classification system that applies to solid wastes that cannot be discharged directly or indirectly to waters of the state and which therefore must be discharged to waste management sites for treatment, storage, or disposal. CalRecycle and its certified Local Enforcement Agency regulate the operation, inspection,

permitting, and oversight of maintenance activities at active and closed solid waste management sites and operations.

California Government Code Section 65962.5 (a), Cortese List

The Hazardous Waste and Substance Sites (Cortese) List is a planning document used by the state, local agencies, and developers to comply with the CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop at least annually an updated Cortese List. The Department of Toxic Substances Control is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

In 1996, CalEPA adopted the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The Unified Program consolidates and coordinates the six state programs that regulate business and industry use, storage, handling, and disposal of hazardous materials and wastes. The OCFA provides the regulatory oversight for federal, state, and local laws and regulations related to hazardous materials use and disposal within the unincorporated County areas. The OCFA protects the public health and the environment from accidental releases and improper handling, storage, transportation, and disposal of hazardous materials and wastes through coordinated efforts of inspections, emergency response, enforcement, and site mitigation oversight.

California Human Health Screening Levels

The California Human Health Screening Levels (CHHSLs or "Chisels") are concentrations of 54 hazardous chemicals in soil or soil gas that CalEPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment on behalf of CalEPA. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the EPA and CalEPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSL can be assumed to not pose a significant health risk to people who may live or work at the site. There are separate CHHSLs for residential and commercial/industrial sites.

Emergency Response to Hazardous Materials Incidents

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government, and private agencies. The plan is administered by the California Emergency Management Agency and includes response to hazardous materials incidents. The California Emergency Management Agency coordinates the response of other agencies, including CalEPA, California Highway Patrol, California Department of Fish and Wildlife, Regional Water Quality Control Board, South Coast Air Quality Management District, and OCFA.

California Emergency Services Act

The California Emergency Services Act was adopted to establish the state's roles and responsibilities during human-made or natural emergencies that result in conditions of disaster and/or extreme peril to life, property, or the resources of the state. This act is intended to protect health and safety by preserving the lives and property of the people of the state.

State Fire Regulations

State fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code, which include regulations concerning building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The state fire marshal enforces these regulations and building standards in all state-owned buildings, state-occupied buildings, and state institutions throughout California.

Databases Relating to Hazardous Waste

The CalEPA compiles, maintains, and updates specified lists of hazardous material release sites in accordance with Government Code Section 65962.5. CEQA Section 21092.6 requires each lead agency to consult the lists to determine whether the project and any alternatives are identified on any of the lists which include the following lists or databases:

- USEPA National Priorities List. This list includes all the sites under USEPA's Superfund program, which was established to fund clean-up of contaminated sites that pose risk to human health and the environment.
- USEPA Comprehensive Environmental Response, Compensation, and Liability Information System. This list contains 15,000 sites nationally identified as hazardous sites. This would also involve a review for archived sites that have been removed from CERCLIS due to No Further Remedial Action Planned status.
- USEPA Resource Conservation and Recovery Act Information System. This database provides a national inventory of hazardous waste handlers. Generators, transporters, handlers, and disposers of hazardous waste are required to provide information for this database.
- Department of Toxic Substances Control (DTSC) Cortese List. The Department of Toxic Substance Control (DTSC) maintains the Hazardous Waste and Substances Sites List for use by state and local agencies to provide information about hazardous release sites. This list includes the Site Mitigation and Brownfields Reuse Program Database.
- DTSC HazNet. DTSC uses this database to track hazardous waste shipments.
- State Water Resources Control Board Leaking Underground Storage Tank Information System. The SWRCB maintains an inventory of underground storage tanks and leaking underground storage tanks. This database also tracks unauthorized releases.

County of Orange Codified Ordinances

Section 3-3-1, Fire code adopted, of the County Codified Ordinances provides for adoption of the California Fire Code for the purpose of prescribing regulations governing conditions that could be hazardous to life and property from fire and explosion. In addition, the regulation states that it shall be enforced by OCFA.

Section 7-9-289, Fire protection, of the County Codified Ordinances provides the following requirements:

a) Any subdivision proposed to be located in an area shown on the Safety Element to be a state designated Local Responsibility Area (LRA) or State Responsibility Area (SRA), Very High Fire Hazard Severity Zone, High Fire Hazard Severity Zone, or Moderate Fire Hazard Severity Zone, and including areas not designated by the state that are subject to brush fires or wildfires, shall provide appropriate fire protection by means of firebreaks, fuel modification programs, access and egress roads, gates, sufficient water supply, secured fire protection agreements, landscaping and open spaces, and such other methods that the Fire Chief has determined will insure the public health, safety and welfare of the future occupants of the subdivision and the adjacent area.

b) The designing of any required fuel modification program shall include landscape architectural planning encompassing visual quality standards, watershed impact and erosion control, and wildlife impact and other design features described in the fire hazard reduction design criteria. Results of wildlife impacts shall be sufficiently mitigated by the subdivider to only occur outside of the approved fuel modification zone. Said program shall include provisions for landscape architectural construction observation, inspection and maintenance.

c) The cost of the design and implementation of any fuel modification program shall be the responsibility of the subdivider.

d) A method or procedure for assuring continued maintenance of any required fuel modification program shall be provided by the subdivider and approved by the Fire Chief and the Director.

2010 Hazard Mitigation Plan

The 2010 County of Orange Hazard Mitigation Plan, adopted in March 2011, includes resources and information to assist County residents, public and private sector organizations, and others interested in participating in planning for natural hazards. The mitigation plan provides a list of activities that may assist the County of Orange in reducing risk and preventing loss in future hazard events. The mitigation action items address multi-hazard issues and specific activities for flood/storm, wildland fire, earthquakes, dam failure, epidemic, urban fire, vector control, mud/landslide, tornado, and tsunami.

Orange County Pesticide Regulation Program

The Pesticide Regulation Program enforces state pesticide laws and regulations to protect the urban and agricultural environment and to protect people working with and around pesticides

from exposure to hazardous pesticide levels. This is accomplished through an ongoing inspection program focused on commercial pesticide use that would be applicable to the vineyard. The inspections performed are designed to ensure compliance with all state laws and regulations which include: the appropriate pesticide being used on the site, using the required protective equipment, application equipment is appropriate and in good repair, and the environment and public is adequately protected. The California Department of Pesticide Regulation oversees the County's Pesticide Regulation Program (Orange County, 2014a).

Orange County Household Hazardous Waste Program

The County operates four Household Hazardous Waste Collection centers for the proper disposal of paints, pesticides and other household toxic products. Center locations include: Anaheim, Huntington Beach, Irvine and San Juan Capistrano (Orange County, 2014b). In addition, waste haulers have services to pick up and dispose of household hazardous wastes.

County of Orange General Plan Safety Element

The following goals, policies, and objectives of the Orange County Safety Element that are relevant to the proposed project are listed below.

Goal 1: Provide for a safe living and working environment consistent with available resources.

Objective 1.1: To identify public safety hazards and determine the relative threat to people and property in Orange County.

Goal 2: Minimize the effects of public safety hazards through implementation of appropriate regulations and standards which maximize protection of life and property.

Objective 2.1: To create and maintain plans and programs which mitigate the effects of public safety hazards.

Objective 2.2: To encourage the development and utilization of technologies that minimize the effects of public safety hazards.

Goal 3: Raise the awareness of Orange County residents, workers, and visitors to the potential threat of public safety hazards.

Objective 3.1: To provide information, training, and assistance to reduce loss of life and injury and to protect private and public property from public safety dangers.

Fire Component

Goal 1: Provide a safe living environment, ensuring adequate fire protection facilities and resources to prevent and minimize the loss of life and property fire.

Policy 2: To establish improved development standards for location of new construction, structural design, emergency vehicular access, and detection hardware.

Policy 6: To provide technical and policy information regarding structural and wildland fire hazards to developers, interested parties and the general public through all available media.

Policy 9: To encourage improvement of fire defense systems in hazardous areas.

Policy 11: To maintain fire hazard information in the County's Buyer Notification Program.

3.8.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to hazards and hazardous materials, a project could have a significant effect on the environment if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- 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;
- For a project located within an airport land use plan or, where such 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;
- For a project within the vicinity of private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- 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.

As described in the Notice of Preparations/Initial Studies prepared for the proposed project (Appendices A1 and A2 of this EIR), the project would not result in impacts related to emissions or handling of hazardous materials within one-quarter mile of an existing or proposed school, be included on a list of hazardous materials sites pursuant to Government Code Section 65962.5, be located within an airport land use plan or within two miles of a public airport, or be located within the vicinity of a private use airstrip. Therefore, these issues are not discussed in the impact analysis below.

3.8.3 Methodology

The significance determination for the hazards analysis is based on consideration of the potential for hazardous materials exposure related to construction and operation of the proposed project as well as the risks to people and structures related to wildfires. As discussed in this EIR, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal

and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases). The term "hazardous material" is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.[1]

Impacts related to wildland fires are evaluated through identification of the existing hazards related to wildland fires and the project's features that would reduce the potential risks. Impacts related to wildland fires are considered significant if the project, with inclusion of required fire reduction features and project design features would expose people or structures to a significant risk of loss, injury or death involving wildland fires

3.8.4 Project Impacts

Impact 3.8-1: Would the project 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 proposed project would consist of residential and open space/vineyard uses. Residential uses are associated with the routine transport, use, and disposal of hazardous materials such as household cleaning products, paint, oil/gasoline for vehicles or yard maintenance equipment, chemicals for the maintenance of pools and spas, and fertilizers for landscaping. Although residents of the project would utilize common types of hazardous materials generally classified as household hazardous waste, normal routine use of these products would not result in a significant hazard to residents or workers in the vicinity of the project.

Operation of the vineyards could require the use of fertilizers, pesticides, insecticides, and rodenticides. Vineyards and landscaping areas would be maintained by the HOA; if necessary, hazardous chemicals would be used by trained agricultural professionals and in compliance with applicable usage regulations, and substantial quantities of hazardous materials would not be used or stored for vineyard or landscaping uses. Therefore, operation of the proposed project would not result in a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous waste. Impacts would be less than significant.

Impact 3.8-2: Would the project 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. As described above, the Phase 2 (north parcel), contains storage areas with various size containers of oils, lubricants, sprays, a propane canister, gasoline cans, paints, spray paints, batteries, and many unlabeled containers (contents unknown). These substances may have leaked, as areas of ground surfaces are stained (Arcadis 2016). The Phase 2 (north parcel) also includes a small bunker that is located near the

[1] State of California, Health and Safety Code, Chapter 6.95, Section 25501(o).

western boundary of the parcel, which was formerly used to store dynamite. Dynamite releases perchlorate, a hazardous compound, to the environment. Hence, it is possible that perchlorate could have been released from the dynamite storage area and leached into soils under or around the bunker.

In addition, several areas within Phase 2 (north parcel) are being used to store numerous dilapidated cars that contain motor vehicle fluids and debris piles 55-gallon drums, tires, equipment, glass, pails and buckets (some containing unknown substances), piping, etc. (Arcadis 2016). The Phase 2 (north parcel) also contains two trash pits that used up until the 1950s or 1960s to burn trash. They are currently covered over by soil and vegetation, and their exact location is unknown (Arcadis 2016).

Due to the existence of these hazardous materials, implementation of the proposed project has the potential to result in the accidental release of hazardous materials into the environment. Construction workers and the public could be exposed to the substances that are present within the containers and vehicles being stored onsite. Additionally, exposure to unanticipated hazardous substances could occur from unearthing the trash pits or excavating contaminated soil that may be present from existing or past uses, such as the storage areas near the airstrip and the bunker that was formerly used to store dynamite. As a result, Mitigation Measure MM 3.8-1 would be implemented to reduce the potential risks related to accidental release and exposure of people and the environment to these hazardous materials.

Mitigation Measure MM 3.8-1 requires a certified hazardous waste hauler to remove all trash pit debris, potentially hazardous materials, wastes, and abandoned dilapidated vehicles on Phase 2 (north parcel). Upon removal, soil samples would be collected at the airport hangar/maintenance area and its storage shed, at the storage bunker previously used dynamite, at the vehicle storage areas, and at other debris piles located throughout the Phase 2 (north parcel). The soils would be analyzed for contaminants of concern with concentrations above worker safety thresholds established by the Regional Water Quality Control Board (RWQCB). Any soils with residual agricultural chemicals exceeding the RWQCB Environmental Screening Levels (ESLs) for residential uses or hazardous waste limits would be characterized, removed, and disposed of off-site at a licensed hazardous materials disposal facility in compliance with state regulations.

Mitigation Measure MM 3.8-1 also requires that a qualified consultant prepare a Soil Management Plan (SMP) to be used by to address any soil contamination concerns identified during soil grading and preparation of the Phase 2 (north parcel). These areas include, but are not limited to, the: airport hangar/maintenance area and its storage shed, the previously used dynamite storage bunker, the vehicle storage areas, and other debris piles.

Excavated soil containing hazardous substances would be classified as a hazardous waste if they exhibit the characteristics of ignitability, corrosivity, reactivity, or toxicity (CCR, Title 22, Division 4.5, Chapter 11, Article 3). The state and federal laws listed and described above, that include: the Occupational Safety and Health Act regarding worker safety, Hazardous Materials Transportation Act regarding transportation of hazardous substances, Hazardous Waste Control Act regarding handling of hazardous materials, Title 8 of the California Code of Regulations (CalOSHA) regarding worker safety, and Titles 22 and 27 of the California Code of Regulations that regulate hazardous solid waste require detailed planning and specific hazardous waste

handling measures to ensure that hazardous materials are properly used, stored, and disposed of, and in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment.

The California Integrated Waste Management Board and the RWQCB also specifically address management of hazardous materials and waste handling in their adopted regulations (CCR, Title 14 and CCR, Title 27). This includes implementation of construction BMPs that would be required by a Storm Water Pollution Prevention Plan (SWPPP) to prevent a hazardous materials release and to promptly contain and clean up any spills, which would minimize the potential for harmful exposures. With implementation of Mitigation Measure MM 3.8-1 and compliance to these existing laws and regulations, the project's construction-related impacts to public or the environment from accident conditions involving the release of hazardous materials into the environment would be less than significant.

Mitigation Measure

MM 3.8-1: Prior to issuance of grading permits for Phase 2 (north parcel), a Site Management Plan (SMP) shall be prepared by a qualified hazardous materials consultant and shall detail procedures and protocols for management of onsite hazardous materials, including:

- A certified hazardous waste hauler shall remove all potentially hazardous materials, wastes, trash pit debris, and abandoned dilapidated vehicles, which shall be disposed of at an appropriate solid waste facility based on the content of the materials. All recyclable materials shall be separated and disposed of at a recycling facility. Hazardous materials shall be transported per California Hazardous Waste Regulations to a landfill permitted by the state to accept hazardous materials.
- After removal of the potentially hazardous materials soils samples shall be taken at the airport hangar/maintenance area, storage shed, bunker, vehicle storage areas, trash pits, and at other debris areas to identify any contaminated soils with concentrations above worker safety thresholds established by the Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs). Any samples identified to exceed the RWQCB ESL limits shall be characterized, removed, and disposed of off-site at a licensed hazardous materials disposal facility according to California Hazardous Waste Regulations. A report of the findings shall be provided to the County for review and approval prior to issuance of grading permits for the Phase 2 (north parcel).
- Any subsurface materials exposed during construction activities that appear suspect of contamination, either from visual staining or suspect odors, shall require immediate cessation of excavation activities. Soils suspected of contamination shall be segregated from other soils to be tested for potential contamination. If contamination is found to be present Environmental Screening Levels (ESLs), any further proposed groundbreaking activities within areas of identified or suspected contamination shall be conducted according to California Hazardous Waste Regulations.
- A Health and Safety Plan (HSP) shall be prepared for each contractor that addresses potential safety and health hazards and includes the requirements and procedures for

employee protection. The HSP shall also outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction.

- All SMP measures shall be printed on the construction documents, contracts, and project plans prior to issuance of grading permits.

Impact 3.8-3: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. As described under the Regulatory Setting above, Orange County's Hazard Mitigation Plan identifies the major hazards that exist within Orange County and establishes the response plans for emergency events related to these hazards. The Hazard Mitigation Plan focuses on measures that would prevent, to the extent possible, loss of life or property related to these hazards and identifies the resources available for responding to emergency events. In addition, the Emergency Operations Center of the Orange County Sheriff's Department is responsible for implementing a response plan to any major emergency event and coordinating the response, which includes evacuation plans (OCSD, 2014). As described throughout this EIR, the proposed project would be consistent with regulations related to preventing or minimizing the threat of or damage related to the primary hazards within the project area, such as fire hazards (including preparation of a Fuel Modification Plan, and Fire Master Plan described further under Impact 3.8-4) and geologic hazards (including, at a minimum, preparation of geotechnical report and compliance with the CBC (see Section 3.6, *Geology and Soils*)). Thus, the proposed project would be consistent with, and would not impair implementation of, the County's emergency response plans.

In addition, the proposed project would not physically interfere with primary routes in the project area that would be used for evacuation purposes. As described, the project area is generally undeveloped within a very rural area that is regionally served by Ortega Highway. Locally, the project site would utilize Long Canyon Road in case of an emergency, which is also used to access the U.S. Forest Service El Cariso Hotshot Camp (forest service fire-fighting complex); the Cleveland National Forest Blue Jay Campground (with 50 campsites); and the Los Pinos Conservation Camp, which is a residential education center. The El Cariso Hotshot Camp is operated by approximately 20 firefighters specially trained in hand crew wildfire suppression tactics by using chainsaws, hand tools, ignition devices, and water delivery equipment. Hotshot crews typically work in forest lands and engage in all phases of wildfire response, from initial attack to mop-up. Thus, in the case of a wildfire emergency the hotshot crew would move into the forest toward the fire, and would not conflict with residents of the proposed project evacuating the forest area.

The project would result in development of 72 new single-family residences, which are anticipated to house approximately 230 new residents. As described in Section 3.15, *Transportation and Traffic,* Long Canyon Road would operate at an LOS of A with operation of the proposed project. Thus, the proposed project would not generate roadway capacity impacts

that could result in impairment of evacuation of the Blue Jay Campground and the Los Pinos Conservation Camp via on Long Canyon Road.

In addition, the proposed project includes roadway improvements to Ortega Highway at Long Canyon Road to accommodate increased ingress and egress to and from the project site without adversely affecting traffic along Ortega Highway. These improvements would aid in emergency evacuation of the project vicinity. Furthermore, as described in Section 3.15, *Transportation and Traffic*, the project would contribute less than two percent to new traffic at the study area intersections. Therefore, the proposed project would not increase traffic on the major thoroughfares within the project area such that interference with emergency response or evacuations plans would occur.

To ensure appropriate emergency access to and within both project phases, the project would adhere to the requirements to the Fire Code. Specifically, section 5.3.2.1.1, specifies access requirements for safety including minimum roadway widths of 28 feet for emergency access within a Very High Fire Hazard Severity Zone. In addition, the project would be required to adhere to Codified Ordinance Section 7-9-289 that requires appropriate means of protection in fire hazard areas, such as the project site. Furthermore, per the County's standard application review process, the project plans, and Fuel Modification Plan and Fire Master Plan (required by Project Design Features PDF-10 and PDF-11) as described further under Impact 3.8-4, have been approved by OCFA. Compliance with the existing fire code requirements along with review and approval of tract maps through OCFA and the County's permitting process would ensure that the project is implemented appropriately to provide emergency access, and not interfere with an emergency response plan. Therefore, the proposed project would not impair or interfere with an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant.

Impact 3.8-4: Would the project 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?

Less than Significant Impact with Mitigation Incorporated. The proposed project is located in a Very High Fire Hazard Severity Zone/Special Fire Protection Area and has dense chaparral, oak woodland, and other areas subject to fire. As described by OCFA, proper management of vegetation in areas at risk from wildfires is a major factor in reducing the chances of homes burning, especially when combined with construction techniques designed to protect a home from flames and burning embers. Over the past 30 years these approaches have contributed to saving hundreds of homes during major wildfires in Orange County (OCFA, 2011b).

As listed in the Project Design Features described in Chapter 2*, Project Description*, the proposed project includes a Fuel Modification Plan (Project Design Feature PDF-10) and a Fire Master Plan (Project Design Feature PDF-11) in accordance with OFCA's Guideline C-05, *Vegetation Management Technical Design for New Construction Fuel Modification Plans and Maintenance Program*, which are included in Appendix G of this EIR.

The BEHAVE (a computer program that models fire behavior) modeling was used to prepare a fire protection plan for the project site, including a Fire Master Plan, and a Precise Fuel Modification Plan and Fire Behavior/Fire Protection Plan included in the Fire Behavior Analysis, which is included as Appendix G of this EIR. Through the use of the BEHAVE modeling, project site fuel modification zones were tailored to maximize the protection of the project site and the surrounding area, while minimizing impacts on the wildlands. Fuel modification zones include:

- Zone A is within the graded pad area of the individual lots and would vary from approximately 15 to 100 feet in width depending on the lot's location within the project, the overall combined fuel modification width inclusive of adjacent zones and the exposure to wildland fuel areas. Within this zone, each homeowner would be responsible for plant selection and maintenance, in conformance with CR&Rs that are implemented by the HOA. Automatic irrigation systems would be required to maintain healthy vegetation with high moisture content. Plants in this zone must be highly fire resistant. Trees are not permitted within 10 feet of combustible structures (measured from the edge of a full growth crown). Only noncombustible construction can occur in Zone A.
- Zone B would be irrigated and maintained by the HOA. The width of Zone B is a minimum of 150 feet as measured from the boundary of Zone A, based on Zone B's location within the project. Most of the engineered slopes that surround project site are in this category. In this zone, all dead and downed plant materials would be removed, and trees and tree-form shrubs would be spaced and pruned for crown reduction. Noncombustible materials would be used within 100 feet from any structure in this zone. This area would contain two different planting palettes, dependent upon the source of irrigation water. The area of Zone B closest to the residences would be irrigated with treated effluent (with domestic water compensating for effluent irrigation shortages during warmer months). In the treated effluent irrigation area, the plant palette would be made up of moderate water use plants. The portions of Zone B not adjacent to residences would use domestic water for irrigation and have a plant palette consisting of low water use plants.
    - Vineyards are an alternative application for the Zone B areas, and would require the clearing of land and the planting of vine rows irrigated by means of a drip or bubbler system. The ground plane would be kept virtually bare, cleared of dead branches and other combustible debris, with only low growing grasses and ground covers allowed so as not to compete with the vines. Additionally, vineyard installation would include the development of service roads and paths, thereby giving the fire department easier and quicker access to these areas.
- Zone C would consist of brush clearance and thinning areas. This would be a non-irrigated zone with a minimum width of 50 feet. It would be maintained by the HOA. In this area, the fuel mass would be reduced by 50 percent and the dead and downed materials would be removed. Fine dead fuels for seasonal grasses would be managed to reduce the ability of the fire to travel from one stand of fuel to the next.

In Zone A, the use of highly resistant vegetation and maintaining a distance between trees and combustible structure would reduce fire mobility. Zone B would be kept clear of combustible materials and would be maintained to have space between vegetation, thereby preventing the formation of a contiguous fuel mass. In Zone C, brush removal would decrease the mobility of fire, as brush serves as combustible connections between trees. Vegetation thinning involves the removal of selected trees (usually classified by their diameter) to reduce the overall vegetation density in an area, thereby reducing crown fire hazard. Crown fires refer to the spreading of fire from treetop to treetop, which can lead to an entire stand of trees engulfed in flames (PNW, 2009). The Fire Master Plan details required access (street length, turnarounds, street width, turning radius, surface type, gates and fire access points for entry into the wildland) hose pulls, and laddering requirement for residences, location of fire hydrant and fire department connections, as applicable. Additionally, the Fire Master Plan provides appropriate ingress and egress as well as establishing construction requirements.

Water for the project would be supplied by EVMWD and would be stored in two reservoirs on the project site (See Section 3.16, *Utilities and Service Systems,* for more information on proposed water supply and infrastructure). These reservoirs have been appropriately sized for peak flow demand and state fire flow requirements as outlined in Appendix B of the 2013 California Fire Code and required by EVMWD and OCFA. This includes the ability of the water pipelines to deliver 1,000 gallons per minute (gpm) and water storage to provide four hours of water at 1,000 gpm.

The proposed project would also include construction features, such as fire sprinklers for each home (Project Design Feature PDF-11), per Section R327 of the 2010 CBC, and slopes would be revegetated with drought tolerant and predominately native species in accordance with the OCFA plant palettes (Project Design Feature PDF-10). The proposed project would comply with all sections of the Orange County Fire Code, such as Section 7-9-289 that outlines development and fuel modification requirements for areas within a designated Very High Fire Hazard Severity Zone/Special Fire Protection Area. In addition, the project plans, a Fire Master Plan (Project Design Feature PDF-11) and a Fuel Modification Plan (Project Design Feature PDF-10) have been approved by OCFA. Finally, as a required by OCFA in Guideline C-05, which defines the requirements for fuel modification and maintenance programs, OCFA would require written proof that the fuel modification areas and fire maintenance program has been incorporated into the covenants, conditions and restrictions (CC&Rs) for the HOA, which would identify OCFA as a third party beneficiary who has the right to enforce the Fire Prevention Maintenance duties, and written disclosures that new homeowners are aware of, and required to comply with, the fuel modification zones on their land.

Also, the Mutual Aid Agreement between OCFA and the Riverside County Fire Department (see Section 3.13, *Public Services*) requires that both agencies respond to emergency alarms within the project area as designated on the Automatic Aid Boundaries Map and the Mutual Threat Zone Maps contained within the Mutual Aid Agreement (included within Appendix G of this EIR). In addition, Mitigation Measure MM 3.13-1 has been included (in Section 3.13, *Public Services*) to require specifications to roadways, access, and fire hydrant spacing to be included in the Secure Fire Protection Agreement with OCFA, which would reduce potential impacts related to fire hazard impacts. With implementation of the Project Design Features (described above),

requirements for development within the wildfire zone, and Mitigation Measure MM 3.13-1, impacts related to wildland fire hazards would be less than significant.

Mitigation Measure

Mitigation Measure MM 3.13-1 (*provided in Section 3.13, Public Services, under Impact 3.13-1*)

3.8.5 Cumulative Impacts

As described above, the project would result in a less-than-significant hazardous materials impact to the public or the environment with implementation of mitigation and adherence to existing regulations. Hazardous material impacts typically occur in a local or site-specific context versus a cumulative context combined with other development projects; although it is possible for combined effects of transporting and disposal of hazardous materials to be affected by adjacent cumulative development. The projects listed in Table 3-1 in Chapter 3, are not in the immediate vicinity of the project area, such that a hazardous event or wildfire on the project site would result in cumulative impacts. The closest cumulative project is located approximately 2.4 miles in the City of Lake Elsinore.

In addition, cumulative projects would be required to comply with the same regulatory framework as the project that are regulated by the Counties and Cities in the area. This includes federal and state regulatory requirements for transporting or disposing of hazardous materials. These regulations are in place to reduce the potential of accidental releases, spill, or explosions of hazardous materials and to minimize the environmental and public health impact should one occur. Although projects cannot completely eliminate the probability associated with an accidental release, explosion, or spill, the existing regulations reduce the overall probability and minimize the impacts during a release. Therefore, the effect of the project on hazardous materials, in combination with other foreseeable projects, would be less than significant.

In the event that any of cumulative projects are within high fire hazard areas, they would be subject to project-specific design features, including fuel modification plans, fire master plans, and fire flow which would reduce impacts related to wildland fire hazards similar to the proposed project. Based on the less than significant impacts of the proposed project and the lack of foreseeable cumulative development near the project, the project's cumulative contribution to hazardous materials and wildland fires impacts would be less than significant.

3.9 Hydrology and Water Quality

The purpose of this section is to analyze the proposed project's potential impacts on surface water and groundwater resources, discuss regional water quality issues, and propose mitigation measures as needed. The following analysis is based on various resources including the Geotechnical Assessment and the Executive Summary of Percolation and Leach Field Potential for both phases (Terrestrial, 2014a), an Onsite Wastewater Treatment System Memorandum (PACE, 2014), and a Response to County Comments on Onsite Wastewater Treatment Systems Memorandum (Terrestrial, 2014b). These three documents are provided in Appendices D1 through D3 of this EIR, respectively. The Water Quality Management Plans (WQMPs) (Hunsaker, 2014a; Hunsaker 2014b) and preliminary hydrology analyses (Hunsaker, 2014c; Hunsaker, 2014d) prepared for both phases were also utilized, and are provided in Appendices H1 through H4 of this EIR.

3.9.1 Environmental Setting

Existing Conditions

Regional Setting

Watershed

The project site is located within the drainage of the San Juan Creek Hydrologic Unit or watershed, under the jurisdiction of the San Diego Regional Water Quality Control Board (RWQCB). The San Juan Creek watershed, located in the southern portion of Orange County and in the South Orange County Watershed Management Area, encompasses a drainage area of approximately 176 square miles and extends from the Cleveland National Forest in the Santa Ana Mountains to the Pacific Ocean at Doheny State Beach near Dana Point Harbor. Elevations in the watershed range from over 5,800 feet above mean sea level (amsl) at Santiago Peak to sea level at the mouth of San Juan Creek. The major streams in the watershed include San Juan Creek, Oso Creek and Trabuco Creek (Hunsaker, 2014a). The project site is located within the Mission Viejo subwatershed (DOC, 2007), sited within the upstream tributaries of the watershed with surface runoff that flows out of steep canyons and widen into several alluvial floodplains (Hunsaker, 2014a). See **Figure 3.9-1** for the project's location within the San Juan Creek watershed and Mission Viejo subwatershed.

The watersheds in Southern California have been subject to numerous large-scale fires during the past 100 years, mostly of human origin. The majority of ignitions have been associated with roadways, arson and person-related activities. The primary effects of these fires are a sharp increase in sediment yield and downstream channel aggradation (or increase in land elevation) for a period of time following the fire (Hunsaker, 2014a). Fire temporarily decreases live vegetation cover, thereby increasing erosion rates and causing an increased sediment yield to travel downstream and raise elevations (Robichaud, 2009).

SOURCE: ESRI, Cal Water

The Preserve at San Juan . 120826

Figure 3.9-1

Project Site Watershed and Subwatershed

Climate

Southern California's Mediterranean climate is characterized by brief, intense storms between November and March. It is not unusual for a majority of the annual precipitation to fall during a few storms in close time proximity to one another. The higher elevation portions of the watershed in which the project is located typically receive significantly greater precipitation due to the effect of the Santa Ana Mountains. In addition, rainfall patterns are subject to extreme variations from year to year and longer term wet and dry cycles. The combination of steep watershed, brief intense storms and extreme temporal variability in rainfall results in "flashy" systems where stream discharge can vary by several orders of magnitude over very short periods of time (Hunsaker, 2014a).

Local Setting

Flooding

The site is not located within a 100-year flood zone on the Federal Emergency Management Agency's Flood Insurance Rate Maps (FIRM 0602452050C and 06059C0375H), in addition, due to the varying topography and natural drainages throughout the project site, it is not subject to flooding.

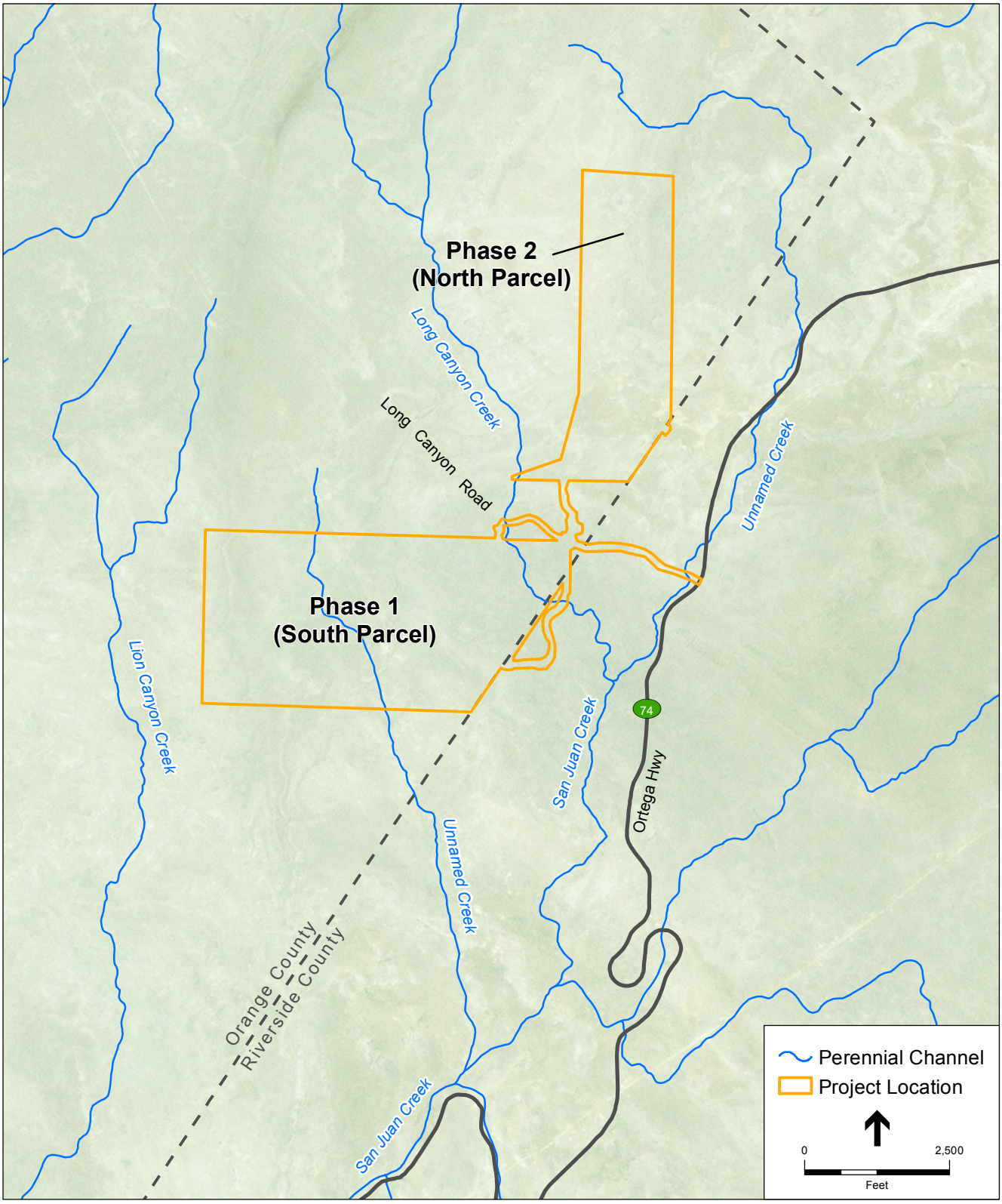
Drainage

The project site consists of rough and steep terrain sloping to the southeast. Currently, no stormwater drainage infrastructure exists on the project site. As shown in the Biological Resources Assessment, which is part of Appendix C1 of this EIR, three perennial streams occur within the study area. Long Canyon Creek flows through the southwest corner of Phase 2 (north parcel) and through the northeast corner of Phase 1 (south parcel), eventually joining with the southwest-flowing San Juan Creek a mile downstream of the Phase I (south parcel) southern boundary (PCR, 2014). Runoff from the western portion of the Phase I (south parcel) currently drains southerly via un-named tributary to San Juan Creek. Runoff from the eastern portion of the Phase I (south parcel) currently drains southeasterly to Long Canyon Creek. Phase II (north parcel) currently drains generally to the southeast, mostly discharging at several points at the south and east property boundary into Long Canyon Creek. All project flows eventually drain to San Juan Creek located downstream and off-site (Hunsaker, 2014a). See **Figure 3.9-2** for a layout of these water bodies in relation to the project site.

Water Quality

According to the 2010 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report), none of the on-site water bodies are listed as impaired by pollutants. However, pathogens (bacteria indicators), DDE (a breakdown product of DDT which was used as an insecticide), phosphorous, selenuim, toxicity and total nitrogen as N have been listed as impairing the beneficial uses in San Juan Creek—the downstream receiving water body of the project site. San Juan Creek currently has an established TMDL for pathogens (Hunsaker, 2014a).

The beneficial uses of San Juan Creek include agricultural water supply; industrial water supply; contact water recreation; non-contact water recreation; warm water ecosystems; cold water ecosystems and wildlife habitat. The mouth of San Juan Creek at the Pacific Ocean (estuary) has



SOURCE: ESRI, USGS NHD

The Preserve at San Juan . 120826

Figure 3.9-2

Water Bodies in the Project Vicinity

the following beneficial uses: contact water recreation; non-contact water recreation; wildlife habitat; rare, threatened and endangered species habitat; marine ecosystems; aquatic migration and shellfish collection (RWQCB, 2012a).

Groundwater

No significant groundwater resources have been mapped within the project site; however, minor seepage was observed from various bedrock locations during the spring of 2005 after periods of rain when PSE conducted a field investigation at the site. During 2013 spring and fall field investigations, no surface or subsurface water was observed on the project site. It is anticipated that the broad alluvial valleys of the project area may have locally perched pockets of ground water near the alluvium/bedrock contact (Terrestrial, 2014a).

Elsinore Groundwater Basin

The proposed project would receive water from the Elsinore Valley Municipal Water District (EVMWD). Groundwater production accounts for approximately 22 percent of EVMWD's total supplies (EVMWD, 2016), which includes supplies from the Elsinore basin. The basin is bounded on the southwest by the Santa Ana and Elsinore Mountains and adjoins the Temecula Valley groundwater basin on the southeast (EVMWD, 2016). EVMWD has groundwater rights to 5,500 acre-feet per year, plus carry-over rights for supplies not used, from the Elsinore Basin; and from 2011 to 2015, EVMWD pumped between 2,588 to 8,708 acre-feet per year, with an average of 5,143.8 acre-feet pumped annually (EVMWD, 2016). Thus, EVMWD had an additional average annual allocation of 356.2 acre-feet that was not utilized between 2011 and 2015.

Coldwater Groundwater Basin

EVMWD has two wells that draw groundwater from the Coldwater Basin, which is an unadjudicated basin located about 8 miles southeast of the City of Corona within the Temescal Valley southwest of Interstate 15. EVMWD has groundwater rights to 1,200 acre-feet per year from the Coldwater Basin, and from 2011 to 2015, EVMWD pumped between 424 to 705 acre-feet per year, with an average of 672.8 acre-feet pumped annually (EVMWD, 2016). Thus, EVMWD had an additional average annual allocation of 527.2 acre-feet that was not utilized between 2011 and 2015).

San Juan Groundwater Basin

Flows from the project area eventually drain into San Juan Creek, which is a principle recharge source of the San Juan groundwater basin. The San Juan groundwater basin underlies the San Juan Valley and several tributary valleys in southern Orange County, bounded by the Pacific Ocean on the west and semi-permeable marine deposits elsewhere. The basin is recharged by several creeks (including San Juan Creek, Oso Creek and Arroyo Trabuco) and precipitation to the valley floor. Groundwater flows southwest towards the Pacific Ocean (DWR, 2004). Water quality in the San Juan groundwater basin ranges from good to poor. Water from its coastal deep subbasins requires treatment as it is brackish (salty) as a result of contact with underlying marine sediments. Water quality in shallow upper subbasin is better, as it contains a lower concentration of total dissolved solids (SJBA, 2011).

Regulatory Setting

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 *et seq*.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the "waters of the United States." The CWA required states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water.

The CWA was enacted to prohibit the discharge of pollutants to "waters of the United States" from any point source, unless a National Pollutant Discharge Elimination System (NPDES) permit authorizes the discharge. Regulatory and permitting processes have been established to control the quality of water runoff from urban development. The CWA was amended in 1987, requiring the United States Environmental Protection Agency (USEPA) to create specific requirements for storm water discharges. In response to the 1987 amendments to the CWA, the USEPA established Phase I of the NPDES Stormwater Program, which required NPDES permits for: (1) municipal separate storm sewer systems generally serving or located in incorporated cities with 100,000 or more people (referred to as municipal permits); (2) 11 specific categories of industrial activity (including landfills); and (3) construction activity that disturbs more than five acres of land. In March 2003, Phase II of the NPDES Program extended the requirements for NPDES permits to numerous small municipal separate storm sewer systems, construction sites of one to five acres, and industrial facilities owned or operated by small municipal separate storm sewer systems, all of which were previously exempted from permitting requirements. Section 402(p) of the CWA mandates that these municipal storm water permits must: (1) effectively prohibit the discharge of non-storm water to the system except under certain provisions, and (2) require controls to reduce pollutants in discharges from the system to the maximum extent practicable, including Best Management Practices (BMPs); control techniques; and system, design, and engineering methods.

Construction General Permit

The State of California Construction General Permit (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ) regulates discharges of pollutants in storm water associated with construction activity (storm water discharges) to "waters of the United States" from construction sites that disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

To obtain coverage under this permit, project operators must electronically file Permit Registration Documents, which include a Notice of Intent, a stormwater pollution prevention plan (SWPPP), and other compliance-related documents. An appropriate permit fee must also be mailed to State Water Resources Control Board (SWRCB). The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality based on potential pollutants. Example BMPs include erosion control (e.g. limitation of vegetation removal), sediment control (e.g. secure soil stockpiling), non-stormwater control (e.g. proper equipment

fueling techniques) and waste and material management (litter control). The SWPPP also includes descriptions of the BMPs to reduce pollutants in storm water discharges after all construction phases have been completed at the site (post-construction BMPs).

California Plumbing Code

"Nonpotable Reuse Systems" of the 2010 California Plumbing Code (Title 24, Part 5, Chapter 16A, Part 1) details definitions and specific design requirements for graywater systems (tanks, irrigation fields and disposal fields). Table 16A-1 describes the required distances of graywater systems from various land features, such as building structures, water supply wells, and streams and lakes. Specifically, a horizontal distance of 100 feet must be maintained between streams and graywater irrigation fields (IAPMO, 2014).

Water Quality Control Policy for Siting, Design, Operation and Maintenance of Wastewater Treatment Systems

On-site wastewater treatment systems are useful and necessary structures that allow habitation at locations that are removed from centralized wastewater treatment systems. On June 19, 2012, the SWRCB adopted Resolution No. 2012-0032—the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems which establishes a Statewide, risk-based, tiered approach for the regulation and management of on-site wastewater treatment system installations and replacements and sets the level of performance and protection expected from on-site wastewater treatment systems in order to avoid water quality degradation and protect public health. The Policy lists standards for existing and replacement on-site wastewater treatment systems, as well as corrective action requirements for failing or potentially failing systems. The policy is divided into four tiers:

- **Tier 0** sets requirements for existing and properly functioning on-site wastewater treatment systems.
- **Tier 1** sets evaluation, siting, design and construction standards for on-site wastewater treatment systems that are considered low risk new or replacement on-site wastewater treatment systems.
- **Tier 2** describes the option given to local agencies of creating approved on-site wastewater treatment system Local Agency Management Programs under which local agencies supervise on-site wastewater treatment systems within their own jurisdiction.
- **Tier 3** requires an Advanced Protection Management Program for all on-site wastewater treatment systems located near a water body that has been listed as impaired due to nitrogen or pathogen indicators pursuant to Section 303(d) of the Clean Water Act. These are prepared in compliance with a Local Agency Management Program if one is in place, or in conjunction with Tier 1 of the policy. It also requires Regional Boards to approve TMDLs for selected water bodies by a certain date.
- **Tier 4** requires corrective action for on-site wastewater treatment systems that are presently failing or fail at any time.

The policy also includes minimum monitoring and reporting requirements; exemption criteria; requirements for determining when an existing on-site wastewater treatment system is subject to major repair, and a conditional waiver of waste discharge requirements (SWRCB, 2012a). The Policy also conditionally waives the requirement of wastewater treatment systems to have Waste Discharge Requirements to operate their systems when they meet the conditions set forth in the Policy. The San Diego RWQCB was required to incorporate these standards into its Water Quality Control Plan (Basin Plan) by May 13, 2014 (SWRCB, 2012b).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), passed in 1969, requires protection of water quality by appropriate design, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility for implementing CWA Sections 401 through 402 and 303(d) to the SWRCB and the nine RWQCBs.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals. The basin plans are updated every three years. Compliance with basin plans is primarily achieved through implementation of the NPDES, which regulates waste discharges as discussed above.

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "waters of the State," file a ROWD. This report requires a complete characterization of the discharge including design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any BMPs used, and a description of disposal methods, and a site map.

Basin Plan—San Diego Region

The Basin Plan for the San Diego Region regulates water quality per the Porter-Cologne Act of the CWA. The Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters; it (1) designates beneficial uses for surface and ground waters; (2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy; (3) describes implementation programs to protect the beneficial uses of all waters in the Region; and (4) describes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan. Additionally, the Basin Plan incorporates by reference all applicable State and Regional Board plans and policies. The goal of the RWQCB is to achieve a balance between the competing needs of mankind for water of varying quality. Accordingly, the Basin Plan establishes or designates beneficial uses and water quality objectives for all the ground and surface waters of the Region

(RWQCB, 2012b). New development such as that proposed by the project must maintain the water quality standards and objectives of the current Basin Plan in its receiving water bodies.

Guidelines for New Community and Individual Sewerage Facilities

The RWQCB adopted Guidelines for New Community and Individual Sewerage Facilities (Resolution No. 79-44) on June 25, 1979. An updated set of guidelines is included in the 2011 Basin Plan, which supersedes Resolution No. 79-44 and has the goal of improving the efficiency of the review process, eliminating unnecessary Regional Board regulation, and improving protection of ground water quality.

Authority deferral to a County health officer in regard to onsite wastewater treatment systems would occur if the project operator satisfies the following conditions: (1) the use of new individual subsurface disposal systems for any subdivision of land will be in the best public interest; (2) individual disposal systems will comply with all existing county design criteria; (3) the cumulative impact from proposed individual disposal system(s) or from new commercial and/or industrial development(s) will not cause adverse impacts to the beneficial uses of ground water; (4) individual disposal systems will meet the minimum unsaturated soil thickness between the bottom of leach lines or the bottom of seepage pits and the historic high ground water level. The minimum unsaturated soil thickness is nine feet for soils with good percolation rates, 12-feet for soils with moderate percolation rates, and 14-feet for soils with poor percolation rates. Exceptions to the unsaturated soil thickness criteria may be allowed by the appropriate County health officer, based upon knowledge of local site conditions.

Upon receipt of the report of waste discharge for the proposed onsite wastewater treatment systems, the San Diego RWQCB would determine whether the proposed project would meet these conditions and authority may defer to the County Department of Health for regulation and protection of groundwater quality.

South Orange County Municipal Separate Storm Sewer System Permit

The current Municipal Separate Storm Sewer System Permit for Orange County (R9-2009-0002) was adopted on December 16, 2009 and will expire on December 16, 2014. Order No. R9-2009-0002 is the fourth iteration of the storm water permit for the Municipal Separate Storm Sewer System Permit participants in the Orange County portion of the San Diego region. The Order contains requirements that are necessary to improve efforts to reduce the discharge of pollutants in storm water runoff to the maximum extent practicable and achieve water quality standards. This Order requires that runoff is addressed during the major phases of urban development (planning, construction, and operation) in order to reduce the discharge of pollutants from storm water to the maximum extent practicable, effectively prohibit non-storm water discharges and protect receiving waters. The Order identifies that discharges from each approved development project must be subject to specific management measures outlined in the Order.

Order No. (R9-2013-0001) was adopted by the San Diego RWQCB on May 8, 2013. Order No. R9-2013-0001 is the fifth iteration of the storm water permit for the Municipal Separate Storm Sewer System Permit participants in the Orange County portion of the San Diego region. This

order will take effect in Orange County following the expiration of Order No. R9-2009-0002 on December 16, 2014.

Orange County Drainage Area Management Plan

The Orange County Orange County Drainage Area Management Plan (DAMP) documents specific water pollutant control elements and is the primary policy, planning and implementation document for Municipal Separate Storm Sewer System Permit compliance within the County. The main objectives of the DAMP are to present a plan that satisfies NPDES permit requirements and to evaluate the impacts of urban stormwater discharges on receiving waters. Instead of being viewed as single document, the DAMP serves as the foundation for a series of model programs, local implementation plans (LIPs) and watershed implementation plans. LIPs serve as a baseline program with detailed DAMP implementation information and are watershed-specific. The DAMP requires the effectiveness of each LIP element to be assessed, and through water quality testing and public input, for BMPs to be enhanced. As the proposed project is located in unincorporated Orange County, it would be subject to the Orange County 2010-2011 LIP.

Orange County Local Implementation Plan

While the DAMP provides a foundation for the Orange County Stormwater Permittees to implement model programs designed to prevent pollutants from entering receiving waters to the maximum extent practicable, the description and detail of how this is being accomplished on a local level is contained in the Local Implementation Plan (LIP). The LIP is designed to work in conjunction with the DAMP and each city and the County have developed a comprehensive LIP that is specific to its jurisdiction (Orange County, 2016).

The 2010-2011 Orange County LIP was prepared as a compliance program for the San Diego RWQCB Municipal Separate Storm Sewer System Permit. The main objectives of this LIP are to fulfill the County's commitment to present a plan that satisfies the requirements of its Municipal Separate Storm Sewer System Permits and to evaluate and reduce the impacts of urban stormwater runoff on the beneficial uses of receiving waters. The LIP, in conjunction with the countywide programmatic DAMP, are the principal policy and guidance documents for the County's NPDES stormwater program (Orange County, 2016).

The LIP characterizes priority projects based on various characteristics as specified by the San Diego Regional Board Area Municipal Separate Storm Sewer System Permit, which requires specific low impact development (LID) BMPs to be implemented for all priority projects when feasible (including maintaining natural drainage corridors, drainage of run-off into pervious areas, and use of permeable surfaces. Sizing criteria are also applied to the LID BMPs to ensure functionality. Per Municipal Separate Storm Sewer System Permit requirements, the LIP requires the preparation of specific WQMP for priority projects. The WQMP is based on targeted watershed pollutants and site-specific potential pollutants called pollutants of concern or primary pollutants of concern based on the type of development being proposed. These pollutant findings then guide which BMPs are incorporated on the project site. Required BMPs include site design LID BMPs (e.g., permeability maximization, vegetated swales, infiltration basins), source control BMPs (e.g., street sweeping), and site design non-LID BMPs (e.g., catch basin filters).

Hydromodification controls as specified in the South Orange County Hydromodification Management Plan (HMP) must also be incorporated. Specific information must also be provided on plan sheets of priority projects prior to the County issuing grading or building permits. The LIP also requires post-construction BMP inspection and maintenance in compliance with Municipal Separate Storm Sewer System Permit requirements. Follow-ups by the County are required by the LIP should certain water quality exceedances be reported (Orange County, 2016).

Hydromodification Management Plan for South Orange County

The HMP was prepared to comply with the San Diego RWQCB Municipal Separate Storm Sewer System Permit (Order R9-2009-0002), which requires an HMP be developed and implemented to manage increases in runoff discharge rates and durations from all priority development projects. Hydromodification refers to changes in the magnitude and frequency of stream flows and its associated sediment load due to urbanization or other changes in the watershed land use and hydrology. It also encompasses the resulting impacts on receiving channels, such as erosion, sedimentation, and potentially degradation of in-stream habitat. The HMP seeks ways to mitigate erosion impacts by establishing requirements for controlling runoff from new development. The HMP has been submitted to the San Diego RWQCB and is currently awaiting a finding of adequacy and is anticipated to be finalized for implementation by December 20, 2013 (Orange County, 2012). Although HMPs are not required to be implemented until 90 days following a finding of adequacy, early implementation is encouraged by each co-permittee. To date, all South Orange County permittees require HMPs.

The HMP requirements state that priority development projects must use continuous simulation to ensure that post-project runoff flow rates and durations for the PDP shall not exceed pre-development, naturally occurring, runoff flow rates and durations by more than 10 percent of the time, from 10 percent of the two-year runoff event up to the 10-year runoff event. This can be achieved through mitigating flow and duration through on-site control measures and addressing sediment loss through on-site management controls (Orange County, 2012).

Orange County Regulations for Wastewater Treatment and Disposal Systems

Effective August 28, 2013, County Regulations for Wastewater Treatment and Disposal Systems include minimum horizontal setback requirements from various and features for onsite wastewater treatment systems. The purpose of these setbacks is to avoid damage to existing utilities, ground instability and water quality degradation. These setbacks are shown in **Table 3.9-1** (Orange County, 2013).

TABLE 3.9-1
MINIMUM HORIZONTAL SETBACKS FOR GROUND ABSORPTION SYSTEMS WHERE TS-I PRETREATMENT SYSTEMS ARE USED FOR ≤ 1000 GALLONS PER DAY

Land Feature or Component	TS-I (feet)
Any public water supply	100
Streams classified as WS-I, except for saprolite	70
Waters classified as S-A, from mean high water mark	70
Other coastal waters, from mean high water mark	35

Land Feature or Component	TS-I (feet)
Any other stream, canal, marsh or other surface waters, from normal pool elevation	35
Any Class I or Class II reservoir, from normal pool elevation	70
Any permanent storm water retention pond, from flood pool elevation	35
Any other lake or pond, from normal pool or mean high water elevation	35
Any building foundation	5
Any basement	15
Any property line	10
Top of slope of embankments or cuts of 2 feet or more vertical height	15
Any water line	10
Upslope interceptor/foundation drains/diversions	7
Sideslope interceptor/foundation drains/diversions	10
Downslope interceptor/foundation drains/diversions	20
Groundwater lowering ditches or devices	20
Any swimming pool	15
Any other nitrification field (except the system repair area)	10

Orange County On-Site Sewage Absorption System Guidelines

Required as part the Orange County Building Plan Check, the Orange County On-Site Sewage Absorption System Guidelines are intended to provide a uniform approach to percolation testing requirements and design criteria of an on-site sewage absorption system. The Orange County Public Works Department's approval of proposed on-site sewage systems may be either a requirement for recordation of a parcel/tract map or a requirement before building/structural permits are issued. There are two main conditions for approval of an on-site sewage system: 1) percolation tests must be performed in accordance with County procedures for leach fields and/or seepage pits; and 2) the system must be designed in accordance with County standards.

Four copies of the engineer's soil percolation reports must be submitted to the Plumbing Plan Check Section at the Orange County Public Works Department. All reports must include a log of all soil borings and percolation tests as well as plans showing a designated system. Reports and plans submitted to obtain Building Permits must include (Orange County, 2014):

- Depth to groundwater
- Depth to any impervious layers
- Acceptable result of six percolation tests distributed throughout an area set aside for trench leach fields and/or at least one passing percolation for seepage pits for the proposed dwelling
- Distance between trenches or seepage pits
- Location of property lines
- Drainage courses

- Soils characteristics
- Trench width or pit diameter
- Pit depth or depth of gravel below pipe
- Topographic lines, if steep slopes exist
- Footprint of house
- Outline of septic tank and distribution box
- The plan must reflect all conditions after precise grading.

In order to test the feasibility of onsite wastewater systems at the project site, preliminary percolation information was completed. In addition to these tests, the project operator would still be required to perform soil percolation tests at each proposed on-site wastewater treatment system location in accordance with the Orange County On-Site Sewage Absorption System Guidelines.

County of Orange General Plan

Resources Element

Goal 1 Ensure an adequate dependable supply of water of acceptable quality for all reasonable uses.

Policy 5 Water Quality – To protect water quality through management and enforcement efforts.

Land Use Element

Policy 14 To guide physical development within the County while protecting water quality through required compliance with urban and stormwater runoff regulations.

3.9.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to hydrology and water quality, a project could have a significant effect on the environment if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level (e.g., the production rate of the 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);
- 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;

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- 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; or
- Be subject to inundation by seiche, tsunami, or mudflow.

It was determined in the NOPs/Initial Studies (see Appendices A1 and A2 of this EIR) that implementation of the proposed project would have no impact related to the placement of housing or structures in a 100-year flood hazard area, and that no impacts related to flooding from the failure of a dam or inundation by seiche, tsunami or mudflow would occur. Additionally, no public comments were received during the public scoping period for the NOPs/Initial Studies that indicated new evidence to analyze these thresholds in this EIR. Therefore, no further analysis of the aforementioned significance criterion is included in the EIR. However, a comment related to the potential for creek flooding to occur during from implementation of the project was received. Potential impacts related to flooding is described below, with the rest of the significance thresholds.

3.9.3 Methodology

The following analysis considers the existing regulatory environment that the proposed project would be subject to which includes both construction and operational phases. In accordance with County requirements, a preliminary hydrology analysis was prepared for the proposed project to determine the flow rates produced the project site and served as the basis for analyzing and designing the on-site storm drainage system. WQMPs were reviewed for consistency with the County of Orange Municipal Separate Storm Sewer System Permit and the ability of project design to minimize potential impacts related to hydrology and water quality. The Onsite Wastewater Treatment System Technical Memorandum (PACE, 2014) is located in Appendix D2 of this EIR. Considering the project characteristics and existing conditions the following potential impacts were evaluated and mitigation measures provided, where applicable.

3.9.4 Project Impacts

Impact 3.9-1: Would implementation of the proposed project violate water quality standards or waste discharge requirements?

Construction

Less than Significant Impact with Mitigation Incorporated. The project site has moderate to high topographic relief and gentle to steep slopes. Soil on slopes tends to be less stable. As a result, the project area could be at risk for soil erosion and the loss of topsoil. Construction activities such as grading and excavation associated with the proposed project have the potential to result in top soil loss and soil erosion by exposing bare soil to wind and rain. Vegetation removal would loosen soil structure and expose bare soil making it more easily eroded by wind and rain, especially on slopes. Total excavation over both phases is estimated at 535,500 cubic yards, with 10,000 cubic yards to be excavated on a maximum day.

The project includes several project design features that would minimize vegetation disturbance by conserving natural areas and not disturbing natural drainages, thereby minimizing erosion potential and sedimentation during construction. These include:

- Clustered development and preservation of open space (Project Design Features PDF-1 and PDF-2);
- Use of similar slope gradients to existing conditions (Project Design Feature PDF-3);
- Conservation of natural areas, including existing trees, other vegetation and soils (Project Design Feature PDF-4);
- Construction of streets to minimum widths and eliminating paved sidewalks in parkways (Project Design Feature PDF-6); and
- Minimization of disturbances to natural drainages (Project Design Feature PDF-14).

In addition, construction of the proposed structures within the project area would require the use of heavy equipment and construction-related chemicals, such as fuels, oils, grease, solvents and paints that would be stored in limited quantities on-site. In the absence of proper controls, these construction activities could result in accidental spills or disposal of potentially harmful materials used during construction that could wash into and pollute surface waters on-site and/or worsen water quality in San Juan Creek downstream. Materials that could potentially contaminate the construction area from a spill or leak include diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, concrete, and other fluids.

However, because project construction would disturb more than one acre of soil, the project operator would be required to comply with the NPDES Construction General Permit, as identified in Mitigation Measure MM 3.9-1. In compliance with this permit, a SWPPP would be prepared and implemented, which would require erosion control, sediment control, non-stormwater and waste and material management BMPs, such as routine inspection and maintenance of equipment, that would prevent construction chemicals used on-site from washing into local water bodies. Construction-related water quality impacts would be less than significant with implementation of the Project Design Features described above and Mitigation Measure MM 3.9-1.

Operation

Less than Significant Impact with Mitigation Incorporated. Development of residential land uses on the project site would generate new sources of pollutants in the project area. Residential landscaping and vineyard areas are a potential source of pesticides, sediment, and nutrients. Vineyards may utilize pesticides and fertilizer (a source of nutrients) that are existing impairments of San Juan Creek, which is downstream of the project site (pathogens, pesticides [DDE] and nutrients [phosphorus, nitrogen and selenium]).

However, the project includes several Project Design Features that would maintain a large portion of the site's existing vegetated (pervious) areas (as provided by Project Design Features PDF-1, PDF-2, PDF-3, PDF-4, PDF-6, and PDF-14 listed previously in the construction discussion), and would be designed to mimic the existing hydrological characteristics (Project Design Features PDF-13 and PDF-16), which would reduce runoff velocities that could transport pollutants and cause erosion and sedimentation.

In addition, compliance with the DAMP requirements (which is Orange County's form of compliance with the NPDES San Diego Region Municipal Separate Storm Sewer System Permit requirements), the project has developed WQMPs for both phases that address hydrologic conditions of concern (Project Design Feature PDF-17). As the project would develop residential uses, the project WQMPs identified nutrients, pathogens (bacteria and viruses) and pesticides as primary pollutants of concern; suspended sediments/solids, oil and grease and trash and debris as pollutants of concern.

Runoff from the improved areas of the site would be conveyed as sheet flow to vegetated swales for conveyance to one of the project's infiltration basins that would treat runoff prior to discharge (Hunsaker, 2014a; Hunsaker, 2014b). Pre-treatment of runoff entering the drywells would include a combination of vegetated swales, pervious pavement, and Maxwell Plus pre-treatment (manhole) units. Roof downspouts and runoff from walkways and patios would be directed towards landscaped areas (Hunsaker, 2014a; 2014b). The use of vegetated swales and vegetated culverts for runoff conveyance would allow for water to be slowed and naturally filtered as it flows toward the infiltration basin (Project Design Feature PDF-17). Infiltration basins would allow pollutants within the design capture volume to further settle out.

In addition, per WQMP requirements, the project site would include the following non-structural source control BMPs that would help protect water quality during its operation:

- Education for residents at close of escrow and periodically after to inform them about their potential impacts to downstream water quality;
- Activity restrictions to minimize potential impacts to water quality;
- Common area landscape management consistent with County Water Conservation Resolution and County Management Guidelines for Use of Fertilizers;
- Routine inspection and maintenance of BMPs;
- Common area litter control including reports of trash disposal violations to the HOA;
- Routine common area catch basin inspection, cleaning and maintenance; and

- Street sweeping of private streets and parking lots prior to the storm season.

Water quality impacts related to the operation of the residential and agricultural uses of the project would be less than significant with implementation of Project Design Feature PDF-13 that would design the project mimic the hydrological characteristics of the site in its natural, undeveloped state, PDF-14 that would implement low impact development techniques, PDF-15 that would implement BMPs to promote infiltration, and PDF-17 that provides for a WQMP that would implement structural and non-structural BMPs.

Pathogens are currently listed as one of the impairments of San Juan Creek. Should onsite wastewater treatment system be improperly sited or malfunction, untreated effluent has the potential to percolate into stream channels on-site, which could drain into San Juan Creek and potentially exacerbate its existing impairment for pathogens. In order to prevent onsite wastewater treatment system failure and potential water quality contamination during operation, the septic tanks would be required to be emptied of sludge regularly and transported off-site by a County-registered liquid waste hauler. Prior to an overflow event, high water level alarms would notify the homeowner and the HOA of a potential overflow condition, which would allow time for potential corrective action. If an overflow still occurs and the soil becomes saturated, the subsurface irrigation system would shut down. In this event, the 1500-gallon emergency storage tank would be used for up to five days of storage until the soil condition improves and treatment can commence.

Per Mitigation Measure MM 3.6-2, in Section 3.6, *Geology and Soils*, the project operator would design the onsite wastewater treatment systems in accordance with the Orange County On-site Sewage Absorption System Guidelines and SWRCB On-Site Wastewater Treatment System Policy, which details siting, design and construction standards for their installation, as well as expected performance and maintenance requirements. Mitigation Measure MM 3.6-2 also requires compliance with the Orange County Wastewater Treatment and Disposal Systems Regulations that provides minimum horizontal setbacks for onsite wastewater treatment systems from various areas, such as streams and riparian areas. This ensures that effluent being treated by the onsite wastewater treatment systems does not have contact with existing water features, thus preventing water quality degradation. Also, per Mitigation Measure MM 3.6-3, residents would be informed about the proper use and maintenance of onsite wastewater treatment systems to prevent damage and failure; and would be provided with the County and HOA approved septic service company contact information to provide as needed maintenance. Overall, water quality impacts from the proposed onsite wastewater treatment systems would be less than significant with implementation of the existing requirements that would be verified during the County and RWQCB permitting process, and Mitigation Measures MM 3.6-2 and MM 3.6-3 that are provided in Section 3.6, *Geology and Soils*.

Mitigation Measures

MM 3.9-1 Prior to the issuance of any grading or building permits, the project operator shall demonstrate compliance under California's General Permit for Stormwater Discharges Associated with Construction Activity by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and

a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) Number; or other proof of filing in a manner meeting the satisfaction of the Manager, Permit Services. Projects subject to this requirement shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). A copy of the current SWPPP shall be kept at the project site and be available for County review upon request.

MM 3.6-2 *(Provided in Section 3.6, Geology and Soils under Impact 3.6-5)*

MM 3.6-3 *(Provided in Section 3.6, Geology and Soils under Impact 3.6-5)*

Impact 3.9-2: Would implementation of the proposed project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level (e.g., the production rate of the 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)?

Construction

Less than Significant Impact. As shown in Table 2-4 in Chapter 2, *Project Description*, construction water usage would total 18.9 AF. Phase 1 would require approximately 3,608,700 gallons (11.1 AF) of water. Phase 2 would require approximately 2,549,550 gallons (7.8 AF) of water. The Phase 1 (south parcel) currently contains a water well and cistern; and Phase 2 (north parcel) contains two active water wells and water storage tanks (one of them 8,000 gallons). These existing facilities currently provide water supply to the project site, and would provide construction water supply throughout construction activities. As described above, the site does not overly any substantial groundwater resources, and groundwater under the site is not used for potable water by EVMWD. Overall, the use of the well water for construction would be temporary, and would not result in other lands not having available water supply. Thus, impacts related to groundwater used during construction activities would be less than significant.

Operation

Operational water supply would be provided by the EVMWD, whose water resources include groundwater from the Elsinore and Coldwater basins. Groundwater production accounts for approximately 22 percent of EVMWD's total supplies (EVMWD, 2016). As described above, EVMWD has groundwater rights to 5,500 acre-feet per year, plus carry-over rights for supplies not used, from the Elsinore Basin; and from 2011 to 2015, EVMWD averaged 5,143.8 acre-feet pumped annually (EVMWD, 2016). Thus, EVMWD had an additional average annual allocation of 356.2 acre-feet that was not utilized between 2011 and 2015. Likewise, EVMWD has groundwater rights to 1,200 acre-feet per year from the Coldwater Basin, and from 2011 to 2015, EVMWD averaged 672.8 acre-feet pumped annually (EVMWD, 2016). Thus, EVMWD had an additional average annual allocation of 527.2 acre-feet that was not utilized between 2011 and 2015).

In addition to groundwater, EVMWD obtains its potable water supplies from Metropolitan (68 percent) and local surface water from Canyon Lake (9 percent). Based on the average generation

unit of 600 gallons per day (gpd) per dwelling unit, the proposed 72 single family residences would generate a total water demand of approximately 43,200 gpd (25,800 gpd for Phase 1 (south parcel) and 17,400 for Phase 2 (north parcel), as shown in **Table 2-5**, Operational Water Demand). As shown on **Table 2-5** in Chapter 2, *Project Description*, total operational demand including vineyard and landscaping uses is 336,128 gpd.

As described in the EVMWD Water Master Plan, the water demand in 2040 would result in an average annual demand of 75.0 mgd, and a maximum day demand of 80.9 mgd. EVMWD's Water Master Plan and UWMP describe that EVMWD will be able to meet the maximum day demand with future supplies of 88.89 mgd (EVMWD, 2016). These water demand projections are based on existing land use/zoning and regional growth projections for the service area.

Currently, the project site has a zoning designation of General Agricultural (A1), which allows residential development at a maximum density of four acres per dwelling unit), which would result in 146 dwelling units on the project site at build out. Conversely, the proposed project would only develop 72 residential units, and the remainder of the project site would consist of preserved open space, landscaping, and fuel modification areas that would be developed. Therefore, the proposed project would result in fewer residential units than the build out allowable by the existing zoning criteria; and development of 72 single-family units on the project site would be within EVMWD's existing water demand projections. EVMWD would not need additional groundwater allocations to serve the proposed project. EVMWD has already provided will-serve letters in 2013, 2015, and 2016, and has planned to provide water services to the project area since at least 2006, when a Water System Plan of Service was prepared by EVMWD (June 2006) that described the ability of the District to provide water services to the project area at a greater density than is currently proposed. Overall, the project is not anticipated to substantially deplete groundwater supplies, and impacts would be less than significant.

The proposed project would increase the amount of impervious on-site by development of structures and groundcover, such as residential building pads, streets, sidewalks, driveways and parking areas on the site. However, the project includes several Project Design Features that would mitigate the increase in impervious surfaces and provide for infiltration stormwater and runoff on-site that include:

- Preservation of 71 percent of the project site in open space and clustering development (Project Design Features PDF-1 and PDF-2);
- The conceptual landscape plan minimizes surface water runoff, incorporate the use of native/drought tolerant plant materials (Project Design Feature PDF-4);
- Construction of streets to minimum widths and eliminating paved sidewalks in parkways (Project Design Feature PDF-6);
- Mimic hydrological characteristics of the site in its natural, undeveloped state, controlling development flows runoff with; vegetated swales and infiltration basins (Project Design Feature PDF-13);
- Low impact development (LID) techniques to minimize the impervious footprint of the project and provide vegetated swales (Project Design Feature PDF-14);

- Minimization of disturbances to natural drainages (Project Design Feature PDF-14);
- The project has been designed to include the following Best Management Practices to promote infiltration (Project Design Feature PDF-15).

In addition, as described above, the groundwater onsite was determined to be isolated and perched within bedrock units and not part of a regional groundwater table; thus, impacts to groundwater recharge are considered less than significant.

Impact 3.9-3: Would implementation of the proposed project 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, siltation or flooding on- or off-site?

Construction

Less than Significant Impact with Mitigation Incorporated. The project would not alter the course of a stream or river. The project site has moderate to high topographic relief and gentle to steep slopes that could exacerbate the potential for substantial erosion and siltation. Construction activities such as grading and excavation associated with the proposed project would temporarily alter the ground surface, thus changing the existing drainage pattern of the site. Total excavation over both phases is estimated at 535,500 cubic yards, with 10,000 cubic yards to be excavated on a maximum day. This construction activity would both alter the ground surface topography and expose a large amount of bare soil to be potentially transported off-site. However, the project includes several Project Design Features that would minimize vegetation disturbance, thereby limiting the erosion potential during construction; which include PDF-1, PDF-2, PDF-3, PDF-14, that are listed above in the Impact 9.3-2 discussion. These Project Design Features would prevent the drainage pattern from being substantially altered during excavation and grading.

Additionally, project construction would also be required to comply with Mitigation Measure MM 3.9-1, which requires compliance with the NPDES Construction General Permit (including the development of a SWPPP). The SWPPP would include erosion control BMPs, such as scheduling and preservation of existing vegetation, which would prevent the exposure of soil to water and reduce the threat of erosion. The SWPPP would also implement sediment control BMPs, such as sandbags and fiber rolls, to trap any sediment that mobilizes on-site. Thus, with implementation of the Project Design Features (listed above) and Mitigation Measure MM 3.9-1, impacts related to alteration of drainage patterns and resulting in erosion, siltation and flooding during project construction would be less than significant.

Operation

Less than Significant Impact. Operation of the proposed project would permanently introduce impervious surfaces and structures, including roads, houses, and sidewalks, to the previously undeveloped pervious area. This would generate increased amounts of runoff, potentially resulting in erosion, siltation and flooding.

As described previously, the project includes several Project Design Features that would minimize alterations to existing ground conditions, reducing potential runoff increases and thereby minimizing erosion, sedimentation and flooding potential during operation. These include: PDF-1, PDF-2, PDF-3, PDF-4, PDF-6, and PDF-14, which are listed previously in the Impact 9.3-2 discussion. The project also includes Project Design Features that would promote infiltration and slow down surface flows to control any excess runoff generated on-site, thereby minimizing sedimentation, erosion and flooding potential. These include: PDF-13, PDF-14, and PDF-15, also listed previously in the Impact 9.3-2 discussion.

The project has been designed so that runoff would be conveyed to vegetated swales, vegetated culverts, and detention/drywell systems, which have been designed to accommodate the stormwater runoff from the project (as described in the Hydrology Study included as Appendices H3 and H4) and would eliminate the potential for flooding. These systems would also prevent any sediment-laden water from discharging off-site by allowing the sediment to settle out, either in the vegetated swales or infiltration basins. These measures would also control the velocity and amount of discharge offsite. A rip rap splash pad has been designed as part of vegetated swales and culverts to dissipate energy and prevent erosion to slopes or channels. In addition, the proposed project would utilize high efficiency / low precipitation irrigation heads and "drip" irrigation, and "smart controllers," including rain shutoff devices, moisture sensors, and downloading of evapotranporation rates to irrigation system programming, for water conservation and reduced runoff. In addition, as recommended by the project WQMPs, the project site would include the following non-structural source control BMPs that would prevent the generation of excess runoff on-site:

- Common area landscape management consistent with County Water Conservation Resolution and County Management Guidelines for Use of Fertilizers;
- Routine inspection and maintenance of BMPs; and
- Routine common area catch basin inspection, cleaning and maintenance.

With implementation of the project's design features and non-structural BMPs, post-development runoff flow rates and durations would not exceed the site's natural conditions by more than 10 percent of the time, from 10 percent of the two-year runoff event up to the 10-year runoff event, as demonstrated by the preparation of the hydrology analysis (Hunsaker, 2014a; Hunsaker, 2014b). These structures would capture and retain the difference in runoff flow rates/volume between the project site's natural and proposed conditions. Thus, impacts relating to alteration of drainage patterns and causation of erosion, siltation and flooding during project operation would be less than significant.

Mitigation Measure

MM 3.9-1 *(Listed previously under Impact 3.9-1)*

Impact 3.9-4: Would implementation of the proposed project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Construction

Less than Significant Impact with Mitigation Incorporated. The proposed project would construct a residential development in a presently undeveloped area, and thus would require the construction of onsite new storm water drainage facilities. Construction of the drainage facilities would include excavation, grading, backfilling and pile-driving activities. These activities would expose bare soil to wind and rain, potentially resulting in top soil loss, soil erosion and sedimentation of surrounding water bodies. The project operator would be required to obtain building and grading permits from the County for the proposed project, which requires the review of storm drain plans by the County prior to the issuance of these permits. The onsite drainage plan would be required to comply with the County Master Plan and Local Storm Drain notes, which pertain to design specifics that ensure efficiency, longevity and water quality protection. In addition, the project would include several Project Design Features that would minimize runoff generated during construction to prevent exceedance of storm drain systems, which include PDF-1, PDF-2, PDF-3, PDF-14, that are listed previously in the Impact 9.3-2 discussion.

In addition, construction activity would be required to comply with the NPDES Construction General Permit per Mitigation Measure MM 3.9-1 (listed previously). In compliance with this permit, a SWPPP would be prepared and implemented; identifying BMPs that would minimize polluted stormwater runoff during construction of the project. With implementation of the Project Design Features described above, and Mitigation Measure MM 3.9-1, potential impacts related to stormwater drainage systems or substantial additional sources of polluted runoff during construction would be less than significant.

Operation

Less than Significant Impact. The project includes development of an onsite stormwater drainage system that would be designed pursuant to County requirements and to meet the needs of the proposed project. The project design features that are part of the project conserve natural pervious areas, disperse impervious area to reduce runoff, promote infiltration, and slow down surface flows. Runoff would be conveyed to vegetated swales, vegetated culverts, and detention/drywell systems, which have been designed to accommodate the stormwater runoff from the project and would control the velocity and amount of discharge offsite that would eliminate the potential for substantial increases in stormwater runoff. In addition, the proposed project would utilize high efficiency / low precipitation irrigation heads and “drip” irrigation, and “smart controllers,” including rain shutoff devices, moisture sensors, and downloading of evapotranporation rates to irrigation system programming, to reduce runoff. Related Project Design Features include: PDF-1, PDF-2, PDF-3, PDF-4, PDF-6, PDF-13, PDF-14, PDF-15, and PDF-17, which are listed previously under Impact 3.9-1 and 3.9-2.

As demonstrated by the hydrology analysis prepared for the project, with implementation of the project’s design features and non-structural BMPs, post-project runoff flow rates and durations for the project would not exceed pre-development, naturally occurring, runoff flow rates and

durations by more than 10 percent of the time, from 10 percent of the two-year runoff event up to the 10-year runoff event (Hunsaker, 2014a; Hunsaker, 2014b). Thus, impacts related to substantial increases in stormwater runoff would be less than significant.

Mitigation Measure

MM 3.9-1 *(Listed previously under Impact 3.9-1)*

Impact 3.9-5: Would implementation of the proposed project otherwise substantially degrade water quality?

Less than Significant Impact with Mitigation Incorporated. San Juan Creek, the project's downstream receiving water body, is listed as impaired for pathogens (bacteria indicators), DDE (a breakdown product of DDT that was used as an insecticide), phosphorous, selenium, toxicity and total nitrogen. Flows from the project site eventually drain into San Juan Creek, which is a primary source of recharge to the San Juan groundwater basin. Should pollutants enter the creek, they could eventually migrate into the San Juan groundwater basin and contaminate groundwater quality. However, the project would include structural and non-structural BMPs as specified in the WQMP and project design features that would help retain and infiltrate the design capture volume. In addition, the natural process of filtration that occurs as surface water percolates into groundwater would likely remove all remaining potential pollutants introduced into the creek by the proposed project.

As described previously, the project proposes onsite wastewater treatment systems on each lot. Pathogens are currently listed as one of the impairments of San Juan Creek. Should onsite wastewater treatment systems be improperly sited or malfunction, liquid effluent has the potential to percolate from the onsite wastewater treatment systems into stream channels onsite, which would drain into San Juan Creek and potentially exacerbate its existing impairment for pathogens and water quality impacts resulting from onsite wastewater treatment system failure could occur. However, prior to a potential overflow event, high water level alarms would occur, which would allow time for potential corrective action by the homeowner or HOA. If an overflow still occurs, the soil becomes saturated and the subsurface irrigation system shuts down, the 1500-gallon emergency storage tank could be used for up to five days of storage until the soil condition improves and treatment can commence.

Mitigation Measure MM 3.6-2, in Section 3.6, *Geology and Soils,* requires the project operator to install the onsite wastewater treatment systems in accordance with the Orange County On-site Sewage Absorption System Guidelines and SWRCB On-Site Wastewater Treatment System Policy (Policy), which details siting, design and construction standards for installation, as well as performance and maintenance requirements for onsite wastewater treatment systems. The design and approval of onsite wastewater treatment systems would be overseen by the Orange County Department of Public Works. Further, the project operator would locate the onsite wastewater treatment systems the required distances away from water features present onsite, as specified in the County Wastewater Treatment and Disposal System Regulations. Through compliance with the Orange County Guidelines and Regulations and the SWRCB Policy (Mitigation Measure MM

3.6-2), onsite wastewater treatment systems would be properly installed and maintained. Per Mitigation Measure MM 3.6-3, residents would be informed about the proper use and maintenance of onsite wastewater treatment systems and would receive information about County and HOA approved service companies to prevent damage and failure. Water quality impacts related to waste discharge requirements would be less than significant with implementation of Mitigation Measures MM 3.6-2 and MM 3.6-3.

Mitigation Measures

MM 3.6-2 *(Provided in Section 3.6, Geology and Soils under Impact 3.6-5)*

MM 3.6-3 *(Provided in Section 3.6, Geology and Soils under Impact 3.6-5)*

3.9.5 Cumulative Impacts

The geographic scope for cumulative impacts to hydrology and water quality includes all related projects located within the San Juan Hydrologic Unit as well as those within the EVMWD service area, which include The Ranch Plan Planning Area 2, Robinson Ridge, Chiquita Ridge, Hampton Inn & Suites Hotel, and Green Street Shopping. Descriptions and statuses of these projects are provided in **Table 3-1** in Chapter 3.0.

The proposed project would have the potential to violate water quality standards. San Juan Creek, the project site's downstream receiving water body is currently listed as impaired for several pollutants. There are several development projects occurring downstream. Therefore, although small amounts of pollutants introduced by the proposed project into San Juan Creek may not exceed impairment thresholds on its own, the project, in combination with other projects downstream, may contribute to a cumulative increase in pollutants in San Juan Creek, thereby exacerbating impairments and/or exceeding water quality thresholds. However, the project would comply with the various federal, state and County/local regulations regarding water quality, drainage, sedimentation, and erosion control that are described previously. Specifically, the proposed project would comply with the NPDES requirements for construction and operation activities, and SWPPPs and WQMPs would implement identified BMPs to protect water quality. In addition, several project design features are included in the project to help reduce threats to water quality, including overflow alarms to allow for corrective action and an emergency storage tank to hold untreated water until treatment can commence. All of these features along with Mitigation Measures MM 3.9-1, MM 3.6-2, and MM 3.6-3 would reduce the project's cumulative effects related to hydrology and water quality. With implementation of these features and requirements, cumulatively considerable impacts associated with hydrology and water quality would not occur and cumulative impacts would be less than significant.

3.10 Land Use and Planning

This section of the EIR identifies existing land uses and applicable policies and analyzes the potential of the project to result in impacts related to land use. The analysis focuses on whether the proposed land uses would be compatible with the surrounding environment as well as consistent with existing regulations and policies.

3.10.1 Environmental Setting

The project site consists of two non-contiguous parcels that are located in the foothills of the Santa Ana Mountains, surrounded by the Cleveland National Forest and within an unincorporated portion of Orange County, to the west of Ortega Highway (see Figure 2.1 in Chapter 2, *Project Description* of this EIR). The two parcels are separated by Long Canyon Road. The project site has an Orange County General Plan Land Use designation of Open Space (OS), and is zoned as General Agriculture (A1).

Phase 1 (south parcel) is approximately 389.6 acres and consists of vacant land that is largely undisturbed. Phase 2 (north parcel) is approximately 194.5 acres and is also primarily vacant land. The project site includes one occupied residence that is located in the southwest corner of Phase 2 (north parcel); this residence would be vacated prior to the start of project construction. In addition, an area in the southwestern portion of the Phase 2 (north parcel) has a previously used private airstrip.

The nearest single-family residences to Phase 1 (south parcel) are located approximately 1,340 feet away to the north, near Long Canyon Road. The nearest sensitive receptor to Phase 2 (north parcel) is a single-family residence located approximately 160 feet from the site boundary to the east, near the southeastern portion of the site. In addition, other existing residential uses are located further to the east, with the nearest structure located approximately 670 feet way. Although low density rural single-family structures are located to the west of the site (the closest is approximately 170 feet away), all of these residences are vacant.

3.10.2 Regulatory Framework

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the designated Metropolitan Planning Organization (MPO) for six counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. As the designated MPO for the region, SCAG is mandated by the federal government to research and create plans for transportation, growth management, hazardous waste management, and air quality. SCAG's major responsibilities include:

- Maintenance of a continuous, comprehensive, and coordinated planning process resulting in a Regional Transportation Improvement Program.
- Development of demographic projections plus the integrated land use, housing, employment, transportation programs, measures, and strategic portions of the South

Coast Air Quality Management Plan, as well as serving as co-lead agency for air quality planning for the Central Coast and Southeast Desert air basin districts.

- Responsibility under the federal Clean Air Act for determining whether projects, plans, and programs conform to the Clean Air Act.
- To function as the authorized regional agency for intergovernmental review of programs proposed for federal financial assistance and direct development activities.
- Review of environmental impact reports for projects having regional significance for consistency with regional plans.
- To function as the authorized area-wide waste treatment management planning agency pursuant to federal water pollution control statutes.
- Responsibility under state law for preparation of the Regional Housing Needs Assessment (RHNA).

Regional Comprehensive Plan

The 2008 Regional Comprehensive Plan (RCP) is an advisory plan prepared by SCAG that establishes a strategy for defining and solving the region's inter-related housing, traffic, water, air quality and other regional challenges. The RCP ties together SCAG's role in transportation, land use, and air quality planning as well as recommending key roles and responsibilities for public and private sector stakeholders and inviting them to help implement the policies of the RCP. The nine areas covered in the RCP are land use and housing, open space and habitat, water, energy, air quality, solid waste, transportation, security and emergency preparedness, and economy. The Land Use and Housing Chapter and the Open Space and Habitat Chapter of the RCP contains policies that are particularly applicable to the proposed project.

Land and Housing

LU-4 Local governments should provide for new housing, consistent with State Housing Element law, to accommodate their share of forecast regional growth.

Open Space and Habitat

OSN-4 SCAG should support policies and actions that preserve natural areas, specifically those areas identified in local, state, and federal plans.

OSN-5 SCAG should support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.

OSN-6 SCAG should encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites.

OSN-7 SCAG should encourage "watershed management" programs and strategies, recognizing the primary role of local governments in such efforts.

OSN-13 Local governments should develop and implement mitigation for open space impacts by:

- Promoting coordinated mitigation programs for regional projects and establish the basis for inter-regional conservation strategies.
- Planning development in locations least likely to cause environmental impact.

OSN-14: Developers and local governments should implement mitigation for open space impacts through the following activities:

- Individual projects should either avoid significant impacts to regionally significant open space resources or mitigate the significant impacts through measures consistent with regional open space policies for conserving natural lands, community open space and farmlands. All projects should demonstrate consideration of alternatives that would avoid or reduce impacts to open space.
- Individual projects should include into project design, to the maximum extent practicable, mitigation measures and recommended best practices aimed at minimizing or avoiding impacts to natural lands, including, but not limited to FHWA's Critter Crossings, and Ventura County.

Regional Housing Needs Assessment

State law requires that jurisdictions provide their fair share of regional housing needs. The California Department of Housing and Community Development (HCD) is mandated to determine the state-wide housing need. In cooperation with HCD, local governments and councils of government are charged with determining the city's or regions existing and projected housing need as a share of the state-wide housing need. The current Regional Housing Needs Assessment (RHNA) (adopted November 2012) identifies housing needs in each SCAG jurisdiction and allocates a fair share of that need to every community. The RHNA indicates that unincorporated Orange County needs to supply a total of 5,272 housing units for the planning period between 2014 and 2021 (SCAG, 2012a). This total is distributed by income category as shown in **Table 3.10-1**.

TABLE 3.10-1
REGIONAL HOUSING GROWTH NEEDS UNINCORPORATED ORANGE COUNTY

Very Low	Low	Moderate	Above Moderate	Total
2,119*	879	979	2,174	5,272
22.3%	18.1%	20%	39.6%	100%

NOTE: Half (1,060) of these Very Low units are assumed to be in the extremely-low category.
SOURCE: SCAG, 2012.

Regional Transportation Plan 2012-2035/Sustainable Communities Strategy

In April of 2012 SCAG adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future. The 2012-2035 RTP/SCS includes a strong commitment to reduce emissions from transportation to comply with SB 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the

federal Clean Air Act. The RTP/SCS links its goals of sustaining mobility with its goals for fostering economic development; enhancing the environment; reducing energy consumption; promoting transportation-friendly development patterns; and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations. In summary, the 2012-2035 RTP/SCS provides a blueprint for improving quality of life for residents by providing more choices for where they will live, work, and play, and how they will move around.

County of Orange General Plan—Land Use Element

Most of the current version of the Orange County General Plan Land Use Element was adopted in 2015. The Land Use Element provides general planning goals and policies for development of unincorporated parcels in Orange County. The Land Use Element goals and policies that are relevant to the proposed project are listed below.

Policy 1: Balanced Land Use - To plan urban land uses with a balance of residential, industrial, commercial, and public land uses.

Policy 2: Phased Development - To phase development consistent with the adequacy of public services and facilities within the capacity defined by the General Plan.

Policy 4: Housing Densities - To provide a variety of residential densities which permit a mix of housing opportunities affordable to the county's labor force.

Policy 7: New Development Compatibility - To require new development to be compatible with adjacent areas.

Policy 8: Creative Design Concepts - To encourage innovative concepts which contribute to the solution of land use problems.

Policy 9: Enhancement of Environment - To guide development so that the quality of the physical environment is enhanced.

Policy 14: To guide physical development within the County while protecting water quality through required compliance with urban and stormwater runoff regulations.

The existing Orange County General Plan Land Use designation for the project site is Open Space (OS), which allows for limited land uses that do not require a commitment of significant urban infrastructure. Permitted compatible uses within Open Space (OS) designated areas include materials recovery/recycling facilities if the design does not adversely impact its open space surroundings; employment uses if they are consistent with the open space character of the area; and low-intensity high technology research and development; office and education uses; and childcare facilities that do not require a commitment of significant urban infrastructure.

As further described below, the project proposes to change the General Plan Land Use of designation from Open Space (OS) to Rural Residential (1A), which allows a minimum density of 0.25 to 0.5 dwelling units per acre, or two to four residences per acre.

County of Orange Zoning Code

The Orange County Zoning Code establishes permitted uses and development standards to guide growth and development throughout unincorporated areas of the county. The existing zoning for the project site is General Agriculture (A1) which provides for agriculture, outdoor recreational uses, and other low intensity activities that maintain a primarily open space character. The General Agriculture (A1) zone allows for residential development at a maximum density of 0.25 dwelling units per acre, or a minimum of four acres per dwelling unit.

As further described below, the project proposes to change the site zoning from General Agriculture (A1) to Residential Agricultural (AR), which provides for single-family residential neighborhoods in conjunction with agricultural and outdoor recreational uses and requires minimum residential lot size of 7,200 square feet. The County's Zoning Code (Section Sec. 7-9-59.1) states that the Residential Agricultural (AR) zone is established to provide for the development and maintenance of medium density single-family residential neighborhoods in conjunction with agricultural and outdoor recreational uses. Specifically, Zoning Code Section 7-9-59.8 provides required site development standards for the Residential Agricultural (AR) zone that include the following:

- Building Site Area: Seventy-two hundred (7,200) square feet minimum.
- Building Height: Thirty-five (35) feet maximum.
- Building Site Coverage: Thirty-five (35) percent maximum.
- Lights: All lights shall be designed and located so that direct light rays shall be confined to the premises.

Natural Community Conservation Planning Program

The NCCP Act (the Act), Sections 2800-2840 of the State Fish and Game Code, authorized the preparation of NCCPs to protect natural communities and species while allowing a reasonable amount of economic development.

The project area is within the Southern Subregion Natural Communities Conservation Plan; however, is outside of the Rancho Mission Viejo planning area and, therefore, not subject to the policies set forth in the plan.

Western Riverside County Multiple Species Habitat Conservation Plan

The off-site roadway improvements that would be completed by the project are within the central western portion of the Elsinore Area Plan of the MSHCP, and the proposed project is subject to applicable policies set forth in the MSHCP. The western Riverside County MSHCP, adopted by the County of Riverside on June 17, 2003, serves as a HCP pursuant to the Act and pursuant to Section 10 (a)(1)(B) of the FESA. The Implementation Agreement (IA) sets forth the implementation requirements for the MSHCP as well as procedures and minimization measures related to take of habitats and species considered for conservation. Implementation of the MSHCP authorizes participating jurisdictions to "take" specified plant and wildlife species within the MSHCP Plan Area. In addition, the wildlife agencies, namely CDFW and USFWS, allow take of habitat or individual species outside of the MSHCP Conservation Area in exchange for the

assembly and management of a coordinated MSHCP Conservation Area. The assembly and long-term management of the MSHCP Conservation Area is the responsibility of Riverside County and Cities within the western portion of Riverside County; and private and public entities that conduct activities that would potentially impact the habitats and species considered for conservation under the MSHCP.

3.10.3 Thresholds of Significance

According to Appendix G of the *CEQA Guidelines* and the County of Orange Environmental Analysis Checklist, a project could have a significant adverse effect on land use and land use planning if it would:

- Physically divide an established community;
- 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; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

It was determined in the Notice of Preparations/Initial Studies (Appendices A1 and A2 of this EIR) prepared for the project that implementation of the project would not divide an established community as the site is undeveloped, within an undeveloped rural area of Orange County. The closest community is El Cariso Village, which is a small rural residential area approximately 1,500 feet east of the project site. The City of Lake Elsinore in Riverside County is six miles southeast and the City of Rancho Santa Margarita in Orange County is approximately 6.25 miles west of the project site. The project is not located in an area that would physically divide an established community. Therefore, no further analysis related to division of an established community is included in this EIR.

The potential for a conflict with an applicable habitat conservation plan or natural community conservation plan is described in Section 3.3, *Biological Resources*, of this EIR, where it is determined that the proposed project would not conflict with such a plan, and specific measures are provided for implementation of the Riverside County Multiple Species Habitat Conservation Plan (MSHCP) as required.

3.10.4 Methodology

Potential impacts associated with the proposed project are evaluated on a qualitative basis through a comparison of the existing land use and the proposed land uses, in consideration of the applicable planning goals, objectives and policies identified above.

3.10.5 Project Impacts

Impact 3.10.1: Would the project 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. The project would develop 72 single-family residences and associated infrastructure. In addition, the development would include roadway improvements to areas on Ortega Highway and Long Canyon Road. The project would also include preservation of large areas of open space, as included in Project Design Features PDF-1 and PDF-2.

The proposed project is located within an area of open space land uses, with nearby small areas of rural residential areas, and public facilities such as the El Cariso fire station and trails within the Cleveland National Forest. The proposed project would cluster development on the portion of the project area north and south of Long Canyon Road where the natural terrain is conducive to development, as provided in Project Design Feature PDF-3. A large portion (71 percent) of the project area would remain as open space and would buffer the proposed residential uses from the Cleveland National Forest (Project Design Feature PDF-2), which would ensure that land use effects between the low density low intensity residential and forest/recreation uses would not occur. A description of the proposed project's consistency with applicable Orange County and SCAG plans, policies, and regulations is provided below.

Southern California Association of Governments

The policies from SCAG's *Regional Comprehensive Plan* and the *2008 Regional Transportation Plan* that are relevant to the proposed project are provided in **Table 3.10-1** along with a description of the proposed project's consistency with each policy. SCAG policies largely focus on achieving job and housing balance within individual communities throughout the region, encouraging development patterns and densities that reduce infrastructure costs and reliance on automobile, and promoting public transit use. SCAG also seeks to minimize environmental impacts through the use of "green" building techniques and landscaping practices, provide affordable housing, and minimize new development in open space areas with limited emergency access. The SCAG policies, applicable to the project include provision of housing; and preservation of open space, natural resources, and cultural resources. As described in **Table 3.10-2**, the proposed project is consistent with the applicable SCAGs policies.

County of Orange General Plan

The County of Orange General Plan establishes policies and regulations that are applicable to the proposed project. The *CEQA Guidelines*, Section 15125, requires that an EIR describe any "inconsistencies" with an applicable general plan, specific plan or regional plan. Although the proposed project would introduce new low density land uses on the site, thus, intensifying the uses as compared to existing almost vacant conditions, project site would be consistent with the General Plan land use policies that are applicable to the proposed project.

The project site is currently designated as OS in the General Plan, which allows for limited land uses that do not require a commitment of significant urban infrastructure that are consistent with the open space character of the area. As stated in the Land Use Element, "*The Open Space category indicates the current and near-term use of the land, most of which is zoned agricultural. It is not necessarily an indication of a long-term commitment to open space uses, except where*

one of the three overlay categories applies (Open Space Reserve, Nature Preserve, and Education Park Compatible)."

The project proposes a General Plan land use designation amendment from OS to Rural Residential (1A), which would allow minimum density of 0.25 to 0.5 dwelling units per acre, or two to four residences per acre. Based on the developed acreage (not including open space areas), the single-family residential development is proposed at a gross density of 0.43 dwelling units per acre (72 units within the 169.5-acre development area), which is well within the area allowed by the proposed land use designation.

With approval of the proposed General Plan land use amendment, the proposed project's uses would be in conformance with the land use designations for the project site, and conversion of the site from open space to low density residential uses would not result in a conflict with relevant General Plan land use policies, as demonstrated in **Table 3.10-3**. Therefore, implementation of the project would result in less than significant impacts related to a General plan policy adopted for the purpose of avoiding or mitigating an environmental effect.

County of Orange Zoning Ordinance

The project includes a proposed zone change from General Agriculture (A1) to Agricultural Residential (AR). The AR zone provides for the development and maintenance of medium density single-family residential neighborhoods in conjunction with agricultural and outdoor recreational uses. The AR zone allows a minimum residential lot size of 7,200 square feet for residential development, which would be far less than what is proposed to accommodate the 72 single-family residential lots. As described above, the proposed project would develop the single-family residential uses at an average lot size of 23,997 square feet in Phase 1 (south parcel) and 23,667 square feet in Phase 2 (north parcel). This would result in a gross density of 0.43 dwelling units per acre (72 units within the 169.5-acre development area). In addition, Zoning Code Section 7-9-59.8 provides required Site Development Standards that include:

- Minimum Building Lot Area: 7,200 square feet
- Minimum Building Site Area: 14,000 square feet
- Maximum Building Height: 35 feet
- Maximum Building Site Coverage: 35 percent maximum
- Minimum Building Setbacks: Front – 20 feet, Side yard – 5 feet, Rear yard – 25 feet

As proposed by the project, residences would be limited to two stories and 35-feet in height, and would not cover more than 35 percent of the site. The County's standard review of development plans prior to approval of grading or development permits would ensure that each parcel meets the zoning code requirements. Therefore, impacts related to consistency with zoning would not occur from implementation of the proposed project.

TABLE 3.10-2
CONSISTENCY OF PROPOSED PROJECT WITH SCAG POLICIES

Objectives and Policies	Statement of Consistency
Land Use and Housing	
LU-4: Local governments should provide for new housing, consistent with State Housing Element law, to accommodate their share of forecast regional growth.	**Consistent.** The proposed project would develop 72 single-family residential lots in an area designated for open space, agriculture, and residential land uses. The project would contribute to the ability for the County as a whole to meet demands for housing, particularly single-family homes.
Open Space and Habitat	
OSN-4: SCAG should support policies and actions that preserve natural areas, specifically those areas identified in local, state, and federal plans.	**Consistent.** Open space within the proposed project accounts for approximately 71 percent of the project area (approximately 414.6 acres). Open space would be concentrated on the project site that would buffer the proposed residential uses and the Cleveland National Forest. This would avoid land use effects between the different uses.
OSN-5: SCAG should support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.	**Consistent.** The proposed project is required to obtain a CWA Section 404 permit from the USACE, a CWA Section 401 permit from the RWQCB, and a Streambed Alteration Agreement permit under Section 1602 of the California Fish and Wildlife Code from the CDFW that would ensure the protection of wetlands unique or sensitive to biological resources. See Section 3.4, *Biological Resources*, of this EIR for further details.
OSN-6: SCAG should encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites.	**Consistent.** The project site has been subject to a thorough cultural resources evaluation to identify known historic and archaeological resources, as well as to identify the potential to identify previously undiscovered resources. The proposed project would incorporate measures to ensure the protection of recorded and unrecorded cultural resources and archaeological sites. See Section 3.5, *Cultural Scientific Resources*, of this EIR for further details.
OSN-7: SCAG should encourage "watershed management" programs and strategies, recognizing the primary role of local governments in such efforts.	**Consistent.** The proposed project would be required to implement a SWPPP for construction and BMPs through a WQMP for operational activities that would prevent and contain pollutants from entering the watershed. In addition, the project includes various project design features, including Project Design Features PDF-1, PDF-4, PDF-12, PDF-13, PDF-14, PDF-15, PDF-16, and PDF-17, that would either help prevent or control increased runoff and pollutants from entering the watershed.
OSN-14: Developers and local governments should implement mitigation for open space impacts through the following activities: Individual projects should either avoid significant impacts to regionally significant open space resources or mitigate the significant impacts through measures consistent with regional open space policies for conserving natural lands, community open space and farmlands. All projects should demonstrate consideration of alternatives that would avoid or reduce impacts to open space. Individual projects should include into project design, to the maximum extent practicable, measures and recommended best practices aimed at minimizing or avoiding impacts to natural lands, including, but not limited to FHWA's Critter Crossings, and Ventura County.	**Consistent.** The proposed project would preserve approximately 71 percent of the project area (approximately 414.6 acres) for open space that would create a buffer between the proposed residential uses and the Cleveland National Forest open space uses. In addition, the project incorporates project design features to protect the significant open space resources, which are the sensitive habitat areas. See Section 3.4, *Biological Resources*, of this EIR.

TABLE 3.10-3
CONSISTENCY OF PROPOSED PROJECT WITH THE COUNTY OF ORANGE GENERAL PLAN

Objectives and Policies	Statement of Consistency
Land Use Element	
Policy 1 Balanced Land Use. To plan urban land uses with a balance of residential, industrial, commercial, and public land uses.	**Consistent.** The project would introduce up to 72 single-family while preserving 414.6 acres of open space, which provides a balance of land uses.
Policy 2 Phased Development: To phase development consistent with the adequacy of public services and facilities within the capacity defined by the General Plan.	**Consistent.** The project applicant would be required to pay appropriate impact fees to cover the cost of public services. Furthermore, as described in Section 3.11, Public Services, of this EIR, the proposed project would not exceed the service need of the project.
Policy 3 Housing Densities: To provide a variety of residential densities which permit a mix of housing opportunities affordable to the county's labor force.	**Consistent.** The proposed project would develop 72 single-family residential housing units, which would contribute to the ability for the County to meet demands for housing a variety of housing types.
Policy 4 Land Use/Transportation Integration: To plan an integrated land use and transportation system that accommodates travel demand.	**Consistent.** As described in Section 3.13, Transportation and Traffic, of this EIR, the proposed project includes improvements to the local roadway transportation system to accommodate traffic generated from the project.
Policy 6 New Development Compatibility: To require new development to be compatible with adjacent areas.	**Consistent.** The proposed project would develop 72 single-family residences and provide a buffer of open space between the residences and the Cleveland National Forest open space (Project Design Features PDF-1 and PDF-2). Project design features would further enhance the rural characteristics of the project (Project Design Features PDF-6, PDF-9, and PDF-19).
Policy 8 Enhancement of Environment: To guide development so that the quality of the physical environment is enhanced.	**Consistent.** The proposed project would preserve 414.6 acres (71 percent of the project area) for open space, which would preserve and enhance the natural, physical environment, and to create a buffer between the residential development and the natural environment of the Cleveland National Forest. Additionally, streets would be designed with rural character (Project Design Feature PDF-6), the development would be clustered in order to minimize impacts to environmental resources (Project Design Feature PDF-2), and a conceptual landscape plan would be prepared with applicable scenic and specific plan requirements (Project Design Feature PDF-4) to enhance the design and reduce impacts.
Policy 9 Enhancement of Environment. To guide development so that the quality of the physical environment is enhanced.	**Consistent.** The purpose of this policy is to ensure that land use activities seek to enhance the physical environment. This policy does not mean that environmental enhancement precludes development. It recognizes the need to improve both the manmade and natural environments. Where aspects of the natural environment are deemed to be truly important, this policy requires that measures be taken to preserve these aspects. Consistent with this policy, the proposed project would preserve a substantial portion of the natural, physical environment, which includes blue line streams, natural oak woodlands, habitat areas, sensitive species, wildlife movement areas, in addition to other resources. Additionally, an Oak tree mitigation program would be implemented that would preserve, restore, and enhance on-site oak groves through sustainable tree plantings (as well as native tree planting). In addition, runoff from the developed areas of Phases 1 and 2 would be collected in vegetated swales that would be constructed as part of the project. The swales would retain, filter, and infiltrate the increased flow anticipated from the increased impervious surface created with development of the Area Plan and would also decrease pollutants in the runoff. Prior to the issuance of a grading permit, a final WQMP would be developed for implementation by the HOA, the entity owning and maintaining the swales. The WQMP would provide guidelines to reduce pollution levels in storm water discharge.
Policy 14 To guide physical development within the County while protecting water quality through required	**Consistent.** Runoff from the developed areas of the project would be collected in vegetated swales that would retain, filter, and infiltrate the increased flow anticipated from the increased impervious surface created with development of the

Objectives and Policies	Statement of Consistency
compliance with urban and stormwater runoff regulations.	project and would also decrease pollutants in the runoff. In addition, a WQMP would be implemented to ensure that water quality protection principles are properly implemented. The Preserve at San Juan Area Plan was designed to maintain existing natural drainage patterns to the extent feasible, and so that flows to the downstream facilities would remain close to conditions that exist prior to implementation of the project. To avoid and minimize potential effects to streams, the design of this Area Plan avoids placement of development, through or adjacent to existing streams to the extent feasible. The one stream would need to be crossed, would be done by installation of a half-arch metal culvert, which would completely across the stream and water area, thereby minimizing interface with the stream and potential water quality impacts.
Resources Element	
Goal 1 Protect wildlife and vegetation resources and promote development that preserves these resources. **Objective 1.1:** To designate open space areas that preserve, conserve, maintain, and enhance the significant natural resources and physical features of unincorporated Orange County. **Policy 1** Wildlife and Vegetation. To identify and preserve the significant wildlife and vegetation habitats of the County. **Objective 1.1:** To prevent the elimination of significant wildlife and vegetation through resource inventory and management strategies.	**Consistent.** As part of the project, 414.6 acres of open space would be preserved that would support wildlife and vegetation resources. Further, the Project Design Features and mitigation measures in Section 3.4, *Biological Resources* would provide for protection of wildlife and vegetation resources, such as sensitive species and Oak trees (Project Design Features PDF-1, PDF-2, PDF-5, PDF-22).
Policy 1.1: To guide and regulate development of the unincorporated areas of the County to ensure that the character and natural beauty of Orange County is retained **Goal 3**: Manage and utilize wisely the County's landform resources. **Objective 3.1:** To minimize to the extent feasible the disruption of significant natural landforms in Orange County. **Policy 5** Landforms. To protect the unique variety of significant landforms in Orange county through environmental review procedures and community and corridor planning activities.	**Consistent.** The proposed project would cluster residences on level portions of the project site, to protect unique landforms, minimize grading, and balance soils onsite (Project Design Features PDF-2 and PDF-3).
Goal 1: Promote optimum sustainable environmental quality standards for air resources. **Objective 1.1:** To the extent feasible, attainment of federal and state air quality standards by the year 2007. **Policy 1:** To develop and support programs which improve air quality or reduce air pollutant emissions.	**Consistent.** The proposed project would not result in air quality emissions that would exceed regional standards, as described in Section 3.3, Air Quality. Thus, the project would be compliant with environmental standards, comply with attainment goals (which the air quality thresholds are based upon), and would not increase pollutant emissions.
Goal 2 To encourage through a resource management effort the preservation of the County's cultural and historic heritage.	**Consistent.** A cultural resources study was conducted for this Area Plan by qualified archaeologists. The study consisted of records searches and field reconnaissance, and concluded that no known historic, archaeological, or paleontological resources occur on the project site. However, the area has been identified as highly sensitive for cultural

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Objective 2.2 Take all reasonable and proper steps to achieve the preservation of archaeological and paleontological remains, or their recovery and analysis to preserve cultural, scientific, and educational values. **Objective 2.3** Take all reasonable and proper steps to achieve the preservation and use of significant historic resources including properties of historic, historic architectural, historic archaeological, and/or historic preservation value. **Objective 2.4** Provide assistance to County agencies in evaluating the cultural environmental impact of proposed projects and reviewing EIRs. **Cultural Resources Policies** The following policies addressing archaeological, paleontological, and historical resources shall be implemented at appropriate stages of planning, coordinated with the processing of a project application as follows: • Identification of resources shall be completed at the earliest state of project planning and review such as general plan amendment or zone change. • Evaluation of resources shall be completed at intermediate stages of project planning and review such as site plan review, as subdivision map approval or at an earlier stage of project review. • Final preservation actions shall be completed at final stages of project planning and review such as grading, demolition, or at an earlier stage of project review. **Archaeological Resources Policies** • To identify archaeological resources through literature and records research and surface surveys. • To evaluate archaeological resources through subsurface testing to determine significance and extent. • To observe and collect archaeological resources during the grading of a project. • To preserve archaeological resources by: o Maintaining them in an undisturbed condition; o Excavating and salvaging materials and information in a scientific manner. **Paleontological Resources Policies** • To identify paleontological resources through literature and records research and surface surveys. • To monitor and salvage paleontological resources during	resources; therefore, Section 3.5, *Cultural Resources* includes mitigation measures to implementation during project construction to ensure consistency with the cultural resources policies by facilitating the recovery and analysis of important cultural and paleontological resources, if identified on the project site.

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the grading of a project. • To preserve paleontological resources by maintaining them in an undisturbed condition. • To develop, utilize, and promote effective technical conservation and restoration strategies	
Goal 1: Ensure an adequate dependable supply of water of acceptable quality for all reasonable uses	**Consistent.** The project would be served by the Elsinore Valley Municipal Water District, which has confirmed water supply and quality to serve the proposed project through a Will-Serve Letter and through development of the Urban Water Management Plan that shows the Districts water resources through 2040.
Policy 5 Water Quality. To protect water quality through management and enforcement efforts.	**Consistent.** A Conceptual WQMP has been prepared for the proposed project; and a Final WQMP would be reviewed and approved by the County as part of the project's Final Subdivision Map prior to issuance of a grading permit for the project. The Final WQMP would implement BMPs to comply with applicable existing regulations for eliminating or minimizing pollutants in storm water runoff during construction and operation of the project. The Final WQMP and BMPs would constitute management and enforcement efforts consistent with this policy.
Policy 3 Energy Conservation. To encourage and actively support the utilization of energy conservation measures in all new and existing structures in the County.	**Consistent.** The project would include the following energy conserving features: • Builder-installed indoor appliances, including dish- washers, showers and toilets, would be low-water use. • Drought-tolerant, native landscaping would be used. • Smart Controller irrigation systems would be installed public and common area landscaping
Safety Element	
Goal 1: Provide for a safe living and working environment consistent with available resources.	**Consistent.** The project would be developed pursuant to all federal, state, and county building development standards including the: California Building Code, California Fire Code, California Plumbing Code, and other related safety standards to ensure a safe environment for residents and structures.
Objective 1.1: To identify public safety hazards and determine the relative threat to people and property in Orange County.	**Consistent.** The potential safety hazards related to the proposed project are identified and analyzed in Sections 3.6, Geology and Soils, 3.8 Hazards and Hazardous Materials, and Section 3.15 Transportation and Traffic. As shown, potential safety hazards are less than significant with implementation of Project Design Features, existing regulations, and identified mitigation measures.
Goal 2: Minimize the effects of public safety hazards through implementation of appropriate regulations and standards which maximize protection of life and property.	**Consistent.** As discussed throughout Sections 3.6, Geology and Soils, 3.8 Hazards and Hazardous Materials, and Section 3.15 Transportation and Traffic public safety hazards would be minimized through implementation of existing regulations.
Objective 2.1: To create and maintain plans and programs which mitigate the effects of public safety hazards.	**Consistent.** The project includes a Fire Master Plan and a Fuel Modification Plan to mitigate the potential impacts of wildfire on public safety.
Objective 2.2: To encourage the development and utilization of technologies that minimizes the effects of public safety hazards.	**Consistent.** The project utilized wildfire modeling software to identify the locations of potential hazards and appropriately develop fuel modification plans and fire master plans to reduce impacts related to wildland fires on public safety.
Goal 3: Raise the awareness of Orange County residents, workers, and visitors to the potential threat of public safety hazards. **Objective 3.1:** To provide information, training, and assistance to reduce loss of life and injury and to protect private and public property from public safety dangers. **Policy 6:** To provide technical and policy information regarding structural and wildland fire hazards to	**Consistent.** As described in Section 3.13, Public Services a mitigation measure has been included to ensure that the project's Homeowners Association provide disclosure of fire hazards and the location of fire and emergency services to all residents. This information shall be provided in information provided to new homeowners and within regular communications to residents from the HOA.

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developers, interested parties and the general public through all available media. **Policy 11:** To maintain fire hazard information in the County's Buyer Notification Program.	
Policy 9: To encourage improvement of fire defense systems in hazardous areas.	**Consistent.** The project includes a Fire Master Plan and a Fuel Modification Plan to mitigate the potential impacts of wildfire on public safety.
Transportation Element Scenic Highways Plan Component	
Goal 1: Preserve and enhance unique or special aesthetic and visual resources through sensitive highway design and the regulation of development within the scenic corridor.	**Consistent.** The proposed project would cluster residences on level portions of the project site, to protect unique landforms, and special aesthetic and visual resources (Project Design Features PDF-2 and PDF-3).
Objective 1.1: Protect and enhance the County's beauty, amenities and quality of life within the unincorporated areas.	**Consistent.** The proposed project would enhance the quality of life within the unincorporated area by integrating with and being sensitive to the environmental constraints of the existing terrain, geology, blue line streams, and the California live oak trees to offers a large lot and remote lifestyle in a natural setting that is not commonly found within Orange County.
Objective 1.2: Add to the pleasure of its residents and visitors by enhancing scenic routes.	**Consistent.** The
Objective 1.4: Preserve established Scenic Highways in order to protect the existing scenic qualities of these corridors.	**Consistent.** There are no established Scenic Highways in the vicinity of the project site. Although, Ortega Highway is an Eligible State Scenic Highway – not officially designated, no effects related to established Scenic Highways would occur from implementation of the proposed project.
Objective 1.5: Develop the roadway portion of the scenic corridors in a manner that recognizes the natural scenic resources of the corridor and is sensitive to them to the maximum extent feasible.	**Consistent.** The proposed project recognizes the scenic resources in the area by developing the project around the existing terrain, geology, blue line streams, and the California live oak trees. In addition, mitigation measures and Project Design Features related to landscaping, paint colors, the and oak tree planting plan, provide consistency between the proposed project and this objective.
Objective 1.6: Require sufficient setback from the scenic corridor, where feasible, for the purpose of preserving the corridor's scenic qualities.	**Consistent.** The proposed structures are set back from Ortega Highway, and located from Long Canyon Road. This setback, as described in Section 3.1, *Aesthetics*, integrates the proposed project into the topography of the area.
Transportation Element	
Policy 1.2: Apply conditions to land use development projects to ensure that the direct and cumulative impacts of these projects are mitigated consistent with established level of service policies.	**Consistent.** The project includes roadway improvements that would ensure that circulation facilities would continue to operate within an appropriate level of service.
Objective 2.1: Plan, develop and implement a circulation system in the unincorporated areas, which is consistent with the Master Plan of Arterial Highways and circulation plans of adjacent jurisdictions.	**Consistent.** The project would include local streets within the developed portions of both project phases that would not conflict with the Master Plan of Arterial Highways and circulation plans of adjacent jurisdictions.
Policy 2.4: Apply conditions to development projects to ensure compliance with OCTA's transit goals and policies.	**Consistent.** As described in Section 3.15, *Transportation and Traffic*, the proposed project would result in a less than significant impact to alternative transportation facilities. Any transit program requirements related to bus or rail would be provided by OCTA upon the agency's review of the tentative tract map.
Policy 2.5: Apply conditions to development projects to ensure implementation of the Circulation Plan as	**Consistent.** The proposed project includes roadway improvements that would ensure that would ensure adequate and safe roadway capacity. Project implementation would not conflict with implementation the County's Circulation Plan. Appropriate conditions of approval will be applied to the project by the County to ensure compliance with applicable

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applicable.	County General Plan circulation policies.
Policy 3.1: Maintain acceptable levels of service on arterial highways pursuant to the Growth Management Element of the General Plan.	**Consistent.** As described Section 3.15, *Transportation and Traffic*, the proposed project would not result in unacceptable levels of service on arterial highways.
Policy 3.2: Ensure that all intersections within the unincorporated portion of Orange County maintain a peak hour level of service "D", according to the County Growth Management Plan Transportation Implementation Manual.	**Consistent.** As described Section 3.15, *Transportation and Traffic*, the proposed project would not result in unacceptable levels of service.
Policy 3.3: Evaluate all proposed land use phasing plans for major development projects to ensure maintenance of acceptable Levels of Service on arterial highway links and intersections.	**Consistent.** The Section 3.15, *Transportation and Traffic* evaluated the cumulative impacts of all proposed development projects in the area of the project and would not result in unacceptable levels of service.
Goal 5: Manage peak hour traffic congestion to achieve an acceptable LOS on existing and future circulation plan facilities in the unincorporated areas of the County.	**Consistent.** As described Section 3.15, *Transportation and Traffic*, the proposed project would not result in unacceptable levels of service.
Policy 5.1: Establish "traffic impact fees" for application to County development projects with measureable traffic impacts, as defined in the Growth Management Element of the General Plan. These fees may serve as local matching funds for Orange County Measure "M" state and federal highway funding programs.	**Consistent.** The project would pay all applicable traffic impact fees as defined in the Growth Management Element of the General Plan as required by the County of Orange.
Policy 5.2: Use uniform analytical methods, in conformance with the Growth Management Plan, Measure M, and the Congestion Management Plan (CMP) to aid in transportation planning and impact evaluation and support the development and utilization of sub-area models to address detailed transportation issues.	**Consistent.** Section 3.15, *Transportation and Traffic* includes a traffic analysis that utilizes methodologies and computer modeling approved by the County of Orange. The traffic study is consistent with traffic modeling that occurs within the local and regional project vicinity to aid in transportation planning.
Policy 5.5: Require as conditions of approval that the necessary improvements to arterial highway facilities, to which a project contributes measurable traffic, be constructed and completed within a specified time period or ADT/peak hour milestone to attain a Level of Service "D" at the intersections under the sole control of the County.	**Consistent.** As described above, the proposed project includes roadway improvements that would ensure that key intersections serving the project site would operate at a LOS "D" or better.
Policy 5.7: Requires a condition of approval, that a development mitigation program, development agreement or developer fee program be adopted to ensure that development is paying its fair share of the costs associated with that development pursuant to Policy 5.1 ("Traffic Impact Fees").	**Consistent.** The project would pay all applicable traffic impact fees as defined in the Growth Management Element of the General Plan as required by the County of Orange.
Growth Management Element	
Goal 2: Ensure that adequate transportation facilities,	**Consistent.** The proposed project would include local streets within the developed portions of both project phases and

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public facilities, equipment, and services are provided for existing and future residents.	improvements to existing roadways to ensure adequate transportation facilities for existing and future residents.
Objective 2: The circulation system shall be implemented in a manner which achieves the established Traffic Level of Service Policy.	**Consistent.** The proposed project would implement a circulation system within the development portions of the project site and offsite roadway improvements to maintain the required level of service.
Policy 3: It is the policy of the County that within three years of issuance of the first use and occupancy permit for a development project or five years of the issuance of a finished grading permit or building permit for said development project, whichever occurs first, that the necessary improvements to arterial highway facilities, to which the project contributes measurable traffic, are constructed and completed to attain LOS D at intersections under the sole control of the County.	**Consistent.** The proposed project would not result in unacceptable levels of service; but would implement roadway improvements to provide safety enhancements along Ortega Highway.
Public Services and Facilities Element	
Policy 1 Phasing and Funding. To implement public facilities in a manner that supports the implementation of the overall land use development policies and the needs of County residents and is consistent with the funding capabilities of the County. Proponents of planned communities or tentative tract or parcel maps in conventionally zoned communities shall provide ultimate, fair share infrastructure improvements for regional services as required by County and service provider plans in effect at the time of project implementation. Proponents shall also participate, on a fair share basis, in provision of community level facilities. The County and service providers shall strive to provide facilities and services necessary to complete the service system.	**Consistent.** Conditions of approval would be applied to the project requiring payment of adopted development impact fees to address the project's fair share cost for public services and facilities. The project would pay applicable development fees for its fair share cost pertaining to schools, police service, fire protection services, and libraries. In addition, the project would implement roadway and water storage and supply improvements to serve the project
Water System	
Goal 1: Encourage the planning and development of a water conveyance and distribution system to meet the County's future demand.	**Consistent.** The proposed project would construct an onsite water system and improve the existing off-site water distribution system to provide for future water demand in the project area.
Policy 1: To ensure the adequacy of water system capacity and phasing, in consultation with the service providing agency(ies), in order to serve existing and future development as defined by the General Plan.	**Consistent.** The proposed project has been coordinated with the water service provider who has prepared a Wil-Serve Letter, which states that the water system would be adequate to serve the proposed project.
Wastewater System	
Goal 1: Support the planning and development of a wastewater system to meet both the County's demand and attain water quality goals.	**Consistent.** The onsite wastewater treatment systems have been designed to provide secondary treatment, reuse, and disposal of wastewater that would meet the County's water quality standards, as described in Section 3.9, *Water Quality and Hydrology*.
Policy 1: To protect quality in both delivery systems and	**Consistent.** The onsite wastewater treatment systems have been designed to provide secondary treatment, reuse, and

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groundwater basins through effective wastewater system management.	disposal of wastewater within the project site. The use of treated effluent for fuel modification irrigation provides an effective wastewater management system that protects water quality.
Policy 3: To ensure the adequacy of wastewater system capacity and phasing in consultation with the service providing agency(ies) in order to serve existing and future development as defined by the General Plan.	**Consistent.** The onsite wastewater treatment systems have been designed to ensure the capacity needed to provide service to each residence.
Waste Management	
Goal: Maintain a competitive rate for disposal in Orange County. **Policy 3:** To promote the utilization of waste recycling and reuse measures which extend the operating life of existing solid waste facilities.	**Consistent.** All solid waste-generating activities within the County are subject to the requirements set forth in AB 939, that requires diversion of a minimum of 50 percent of solid waste. In addition, after 2020 all development would be required to divert 75 percent of solid waste pursuant to state regulations. The proposed project and the commercial waste hauler that serves the project would be required to comply with these mandates regarding solid waste management, which are also implemented by the landfill facilities.
Orange County Fire Authority	
Goal 1: Provide a safe living environment ensuring adequate fire protection facilities and resources to prevent and minimize the loss of life and property from structural and wild land fire damages.	**Consistent.** The proposed project would implement a Fire Master Plan (Project Design Features PDF-10 and PDF-11) with fuel modification zones that would minimize the risk of wildfires and the potential for loss of life and property from structural and wildland fire damage. With the implementation of the project's fuel modification features, the risk of wild land fires to the proposed project would be substantially reduced.
Goal 2: To provide an adequate level of paramedic service for emergency medical aid in order to minimize trauma of injury of illness to patients.	**Consistent.** The incremental increase of population generated by the proposed project would not affect the ability of medical providers to provide adequate levels of paramedic service. Due to the limited increase in development that would occur from the project, the effect on paramedic services would be negligible. The proposed project would implement all applicable safety and fire features per the OCFA requirements, thus minimizing the demand for paramedic services. Further, conditions of approval would be applied to the project requiring payment of adopted development impact fees to address the project's fair shale cost of medical services and facilities.
Objective 1: To achieve desired level of fire protection and paramedic service through coordinated land use and facility planning.	**Consistent.** Compliance with the applicable regulatory requirements and implementation of the Project Design Features including the approved fuel modifications and Fire Master Plans (Project Design Features PDF-10 and PDF-11) would ensure that the project would not significantly affect fire level of protection services. Further, conditions of approval would be applied to the project requiring payment of adopted development impact fees to address the project's fair share cost for fire and paramedic protection services and facilities.
Policy 3: Site Design Criteria. Require all land use proposals to implement adequate site design so as to maximize fire protection and prevention in order to minimize potential damages. The site design criteria shall be established to reflect the levels of protection needed for projects in various fire hazard areas. Such criteria shall include consideration as to: structure type and density, emergency fire flow and fire hydrant distribution, street pattern and emergency fire access, fuel modification programs, automatic fire sprinkler systems, and other requirements as determined by the Fire Chief. In accordance with the Insurance Services Office (ISO) suggested standards, ultimate fire protection rating shall be maintained by General Plan land sue categories as follows: 1) ISO 3 for all urban development including Residential	**Consistent.** The following features of the proposed project would ensure the project is consistent with this policy. • The project would be designed to provide fire-resistant construction for all structures, including utilizing fire-resistant building materials and sprinklers. • Three fuel management zones are planned for the project would provide fire protection for development within the Area Plan from the potential of fire hazard. • A fire Master Plan has been approved by the Orange County Fire Authority for the Area Plan, which provides appropriate fire safety protective measures.

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(1C and 1B), Commercial (2Aand 2B), Employment (3.0) and Public Facilities (4.0) which are within 5 miles from a fire station and less than 1000 feet from a hydrant; and 2) ISO4 for Rural Residential (1A) which are within 5 miles from a fire station and less than 100 feet from a hydrant. For areas greater than 5 miles or 1,000 feet, the ISO suggested standard is 9.	
Orange County Sheriff	
Goal 1: Assure that adequate Sheriff patrol service is provided to ensure a safe living and working environment.	**Consistent.** The incremental increase in population from the project would not substantially impact Sheriff protection services. Further conditions of approval would be applied to the project requiring payment of adopted development impact fees to address the project's fair share cost for police protection services and facilities.
Objective 1.1: To maintain adequate levels of Sheriff patrol services through coordinated land use and facility planning efforts.	**Consistent.** See response to Goal 1 above.
Policy 1 Land Use Review. To continue to coordinate land use proposal reviews with the County Sheriff-Coroner Department to assure that Sheriff patrol service shall be adequately addressed.	**Consistent.** Pursuant to County policy, the Orange County Sheriff's Department would review all major land use proposals prior to project approvals to ensure that adequate Sheriff service is available and/or can be extended to the project.
Schools	
Goal 1: Encourage the funding and development of adequate school facilities to meet Orange County's existing and future demand.	**Consistent.** The project will pay the required Senate Bill 50 mitigation fees pursuant to Government Code Section 65995 to the school district to fully mitigate the project's impacts to school facilities.
Objective 1.1: To achieve the desired level of school facilities through coordinated land use and facility planning.	**Consistent.** The project will pay applicable school impact fees per Senate Bill 50, which would be utilized to fund school service and facilities that serve the project area.
Policy 1: To coordinate land use proposal reviews with appropriate school districts to assure that facility needs shall be adequately addressed, including the notification and participation of school district planners in initial County studies of all major developments.	**Consistent.** The project will pay applicable school impact fees per Senate Bill 50, which would be utilized to fund school services and facilities that serve the project area. Pursuant to County policy, the school district would review the project prior to its approval to ensure that school services are adequately addressed.
Policy 3: To continue to require compliance with AB 2926.	**Consistent.** The project will pay applicable school impact fess per Senate Bill 50, which would not conflict with development impact fees implemented by AB 2926, which allows school districts to collect impact fees from developers of new residential space.
Library	
Goal 1: Assure that an adequate level of library service is provided within the service are of the Orange County Public Library.	**Consistent.** The incremental population increase resulting from the project would minimally impact library services and would not affect the ability of local libraries to provide library services. Further, the project will pay development impact fees to offset the incremental increase in demand for library services and facilities created by the project.
Recreation Element	
Goal 1: Provide adequate local park sites to meet the recreation needs of existing and future residents and	**Consistent.** The project's residents would create additional recreational demands on existing parks and recreation facilities. The project is not proposing new park or recreational facilities; however, is adjacent to large areas of

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preserve natural resources within unincorporated Orange County.	recreational open space. In addition, the project would be required to pay established in-lieu park fees to mitigate impacts to local and neighborhood park facilities that serve the project area.
Policy 2.32: To acquire park lands by requiring residential developers to provide a minimum of 2.5 net acres of usable local park land (i.e. park land that is relatively level, served by utilities, for multipurpose playfields, court sports, etc) for each prospective 1,000 residents. In no case shall the credit given for park land and improvements exceed the total requirements under the Local Park code. No credit banking shall be permitted when a developer provides full requirement in acreage and also provides improvement.	**Consistent.** See response to Goal 1 above.
Policy 2.4: To acquire local park lands in unincorporated areas to provide active recreation facilities to meet the needs of present and future residents through dedications, or irrevocable offers of dedication, in fee title from residential developers.	**Consistent.** See response to Goal 1 above.
Noise Element	
Policy 4.1: To enforce the County's Noise Ordinance to prohibit or mitigate harmful and unnecessary noise within the County.	**Consistent.** The project would comply with the County's Noise Ordinance during both construction and operation. Potential operational noise impacts would be mitigated with implementation of Project Design Features and the mitigation measures listed in Section, 3.11, *Noise*. While construction noise may temporarily exceed levels permitted by the County of Orange Noise Ordinance, such noise is treated as being in compliance if it occurs during the designated construction hours prescribed by the Noise Ordinance. As the project's construction activities would occur during the designated construction hours, the project would comply with the Noise Ordinance. The project's operational noise from the residential land uses would not exceed the County's exterior or interior noise standards.
Policy 4.5: To require that noise from motors, appliances, air conditioners, and other consumer products does not disturb occupants of surrounding properties.	**Consistent.** As described in Section, 3.11, *Noise*, heating and air conditioning systems that would be installed with the proposed project would not result in noise impacts on surrounding residential uses.
Goal 5: To fully integrate noise considerations in land use planning to prevent new noise/land use conflicts.	**Consistent.** The project's proposed single-family land uses would not result in noise in excess of the County's exterior or interior noise standards. In addition, developed portions of the project area would be surrounded by vegetated buffer areas (fuel modification zones) that would prevent noise related land use conflicts.
Policy 5.1: To utilize the criteria of acceptable noise levels for various types of land uses as depicted in Table VIII-2 (in the County of Orange General Plan Noise Element) in the review of development proposals.	**Consistent.** The project's proposed residential uses would be within the acceptable noise levels as depicted in Table VIII-2 of the County's General Plan. In addition, and as described above, Project Design Features and mitigation measures (listed in Section, 3.11, *Noise*) would be implemented to ensure that project related noise effects would be minimized.
Policy 5.4: To stress the importance of building and design techniques in future site planning for noise reduction.	**Consistent.** As described above, the development portions of the project area would be surrounded by buffers that would reduce noise effects on adjacent land uses. In addition, Project Design Features and mitigation measures (listed in Section, 3.11, *Noise)* would be implemented to ensure that project related noise effects are limited.
Goal 6: To identify and employ mitigation measures in order to reduce the impact of noise levels and attain the standards established by the Noise Element, for both interior areas and outdoor living areas for noise sensitive land uses.	**Consistent.** The project would comply with the County of Orange Noise Ordinance. Additionally, the project would implement Project Design Features and mitigation measures (listed in Section, 3.11, *Noise)* to minimize noise to the extent feasible. During project operation, project residents and surrounding noise sensitive receptors would not be exposed to noise levels that would exceed the standards established by the Noise Element.

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Policy 6.2: Continue enforcement of Chapter 35 of the Uniform Building Code, currently adopted edition, and the California Noise Insulation Standards (Title 25 California Administrative Code).	**Consistent.** All new residential units developed as part of the project would be constructed in accordance with the applicable provisions of Chapter 35 of the Uniform Building Code and the California Noise Insulation Standards (Title 25 California Administrative Code).
Policy 6.3: To require that all new residential units have an interior noise level in living areas that is not greater than 45 decibels CNEL with it being understood that standard construction practices reduce the noise level by 12 decibels CNEL with the windows open and 20 decibels CNEL with the windows closed. Higher attenuation than listed above may be claimed if adequate field monitoring or acoustical studies are provided to and approved by the County.	**Consistent.** The project would develop all residential units developed in accordance with the County adopted noise standards. In addition, as described above, the new residential units would be constructed in accordance with the applicable provisions of Chapter 35 of the Uniform Building Code and the California Noise Insulation Standards (Title 25 California Administrative Code).
Policy 6.5: All outdoor living areas associated with new residential uses shall be attenuated to less than 65 decibels CNEL.	**Consistent.** The project site is surrounded by rural and open space land use. There are no known noise generators that would result in outdoor noise levels exceeding 65 CNEL. In addition, the project would construct all residential uses in accordance with the County adopted noise standards.
Policy 6.7: To apply noise standards as defined in the Noise Element for noise-sensitive land uses.	**Consistent.** The proposed residential uses would be developed and operated consistent with the Noise Element standards for noise-sensitive land uses. As described above, Project Design Features and mitigation measures (listed in Section, 3.11, *Noise)* would be implemented, which would apply the noise standards within the Noise Element.
Housing Element	
Strategy 5a: Encourage the use of energy conservation features in residential construction, remodeling and existing homes.	**Consistent.** Residential development as part of the project would conform to Title 24 energy requirements. Other energy conserving features incorporated as part of the project include: • Builder-installed indoor appliances, including dishwashers, showers and toilets, would be low-water use. • Drought-tolerant, native landscaping would be used. • Smart Controller irrigation systems would be installed.

3.10.6 Cumulative Impacts

The cumulative study area for land use and planning include all areas within the unincorporated Orange County, and the adjacent city areas of Lake Elsinore, Rancho Santa Margarita, and Mission Viejo. As shown in **Table 3-1**, several residential and commercial projects are proposed within the nearby geographical area including: the Lakeshore Point and Villages at Lakeshore projects within the City of Lake Elsinore; the Ranch Plan Planning Area 2 in unincorporated Orange County, and Robinson Ridge in the City of Rancho Santa. The projects within the City of Lake Elsinore are the closest related projects, approximately 2.4 miles from the proposed project. Because of this distance, cumulative land use compatibility impacts, which are a function of the relationship between the interactive effects of a specific development site and those of its immediate environment, would not occur. Therefore, the proposed project would not have a cumulatively considerable impact regarding land use.

As described previously in this section, land use impacts related to the proposed project would be a less than significant with respect to conflict with applicable regulations, policies, and standards of the General Plan, zoning ordinance, and SCAG regional policies. The related projects would also be subject to applicable regulatory policies and plans, which would reduce potential land use conflicts and conflicts with policies adopted for the purpose of avoiding or mitigating an environmental effect. As a result, cumulative impacts related to land use and planning would be less than significant.

3.11 Noise

This section evaluates the potential for noise and groundborne vibration impacts to result from implementation of the proposed project. This includes the potential for the proposed project to result in impacts associated with a substantial temporary and/or permanent increase in ambient noise levels in the vicinity of the project site; exposure of people in the vicinity of the project site to excessive noise and groundborne vibration levels; and whether this exposure is in excess of standards established in the local general plan or noise ordinance. Finally, mitigation measures to reduce the project's noise and vibration levels are proposed, where appropriate, to avoid or reduce potential significant impacts generated by the proposed project.

Data used to prepare this analysis were obtained from the Orange County General Plan Noise Element, the Orange County Codified Ordinances, and by measuring and modeling existing and future noise levels in the project site vicinity (see modeling data in Appendix I of this EIR). Information contained in the project *Transportation Impact Analysis* (TIA) prepared by Urban Crossroads was used in the modeling of traffic noise exposure (and is included as Appendix J of this EIR).

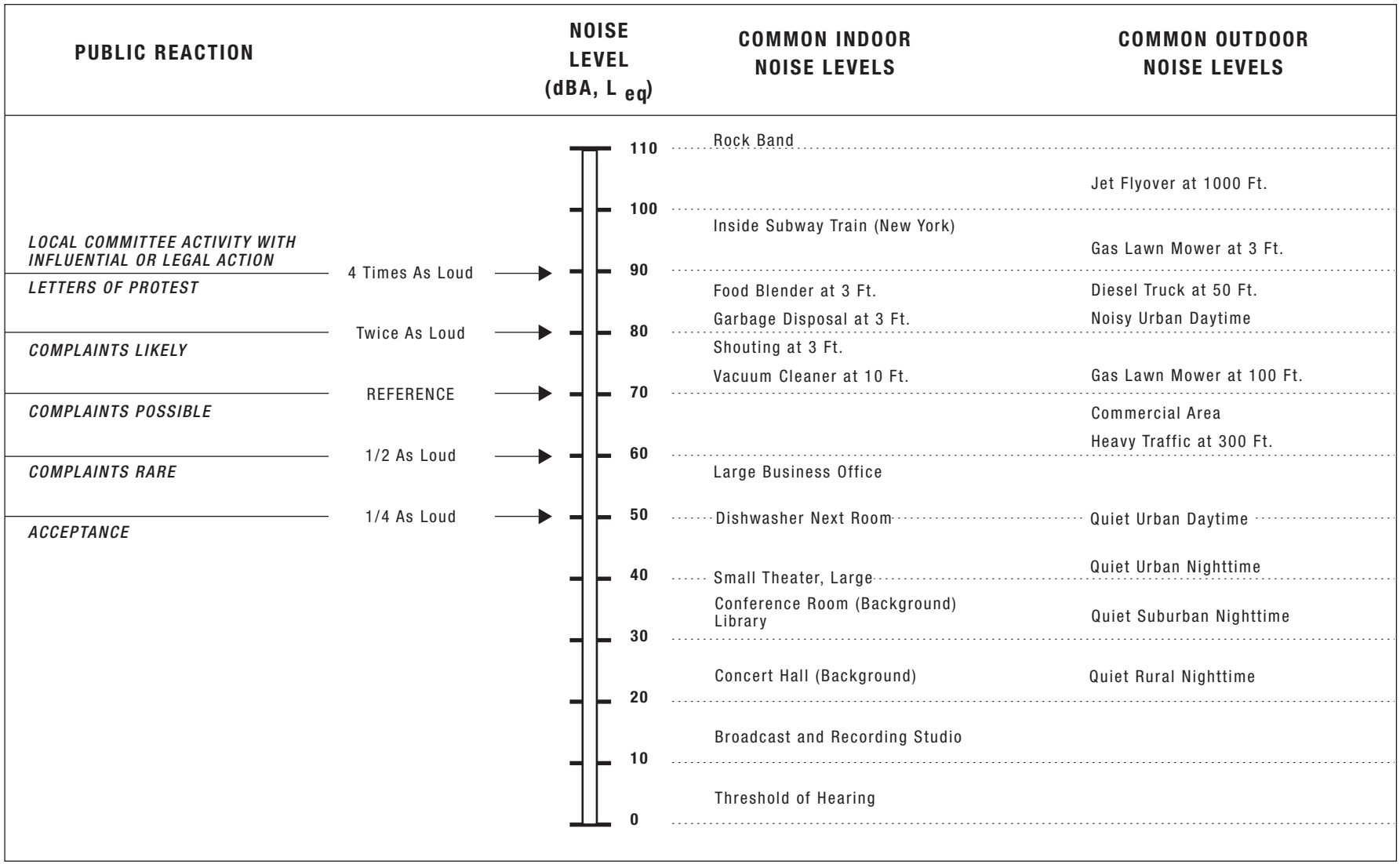
3.11.1 Environmental Setting

Noise Principles and Descriptors

Noise is generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency deemphasis and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown in **Figure 3.11-1.**



SOURCE: ESA, 2013

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Figure 3.11-1
Effects of Noise on People

Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented in Figure 3.11-1 are representative of measured noise at a given instant in time; however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The L_{eq}, or equivalent sound level, is used to describe noise over a specified period of time in terms of a single numerical value; the L_{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L_{eq} may also be referred to as the average sound level.

L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

L_{min}: The minimum, instantaneous noise level experienced during a given period of time.

L_{dn}: Also termed the day-night average noise level (DNL), the L_{dn} is the average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dBA to measured noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account nighttime noise sensitivity.

CNEL: CNEL, or Community Noise Equivalent Level, is the average A-weighted noise level during a 24-hour day that is obtained after an addition of 5 dBA to measured noise levels between the hours of 7:00 p.m. to 10:00 p.m. and after an addition of 10 dBA to noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Effects of Noise on People

Noise is generally loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance);
- Interference effects (e.g., communication, sleep, and learning interference);
- Physiological effects (e.g., startle response); and

- Physical effects (e.g., hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects of environmental noise refer to those effects that interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, telephone conversations, and interference with sleep. Sleep interference effects can include both awakening and arousal to a lesser state of sleep. With regard to the subjective effects, the responses of individuals to similar noise events are diverse and are influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Overall, there is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction on people. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change in noise levels is considered to be a barely perceivable difference;
- A change in noise levels of 5 dBA is considered to be a readily perceivable difference; and
- A change in noise levels of 10 dBA is subjectively heard as doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion, hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans, 1998).

Fundamentals of Vibration

As described in the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment (FTA, 2006), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. Peak particle velocity is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (FTA, 2006). The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration sensitive equipment.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second (in/sec) PPV (FTA, 2006).

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold of perception for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is considered to be the approximate dividing line between barely perceptible and distinctly perceptible levels for many people (FTA, 2006).

Existing Conditions

Existing Ambient Daytime Noise Levels

The proposed project site consists of two non-contiguous sites (i.e., Phase 1 (south parcel) and Phase 2 (north parcel)) that are between 2,300 feet and 2,970 feet west of Ortega Highway, respectively, and separated by Long Canyon Road. As described in Chapter 2, *Project Description*, of this EIR, both Phase 1 (south parcel) and Phase 2 (north parcel) are surrounded by undeveloped vegetated Cleveland National Forest lands to the north, west, and south, and Ortega Highway to the east.

The closest sensitive uses to Phase 1 (south parcel) include a residence near Long Canyon Road that is 1,340 feet from the project site, the U.S. Forest Service El Cariso Hotshot Camp located approximately 1,400 feet to the north, and the Los Pinos Conservation Camp), which is also approximately 1,400 feet from the site. The closest sensitive uses to Phase 2 (north parcel) is an existing residence that is approximately 160 feet from the southeastern boundary of the site. In addition, there is currently one residence located within the southwest corner of Phase 2 (north parcel) that is currently occupied; however, this residence would be vacated prior the start of project construction.

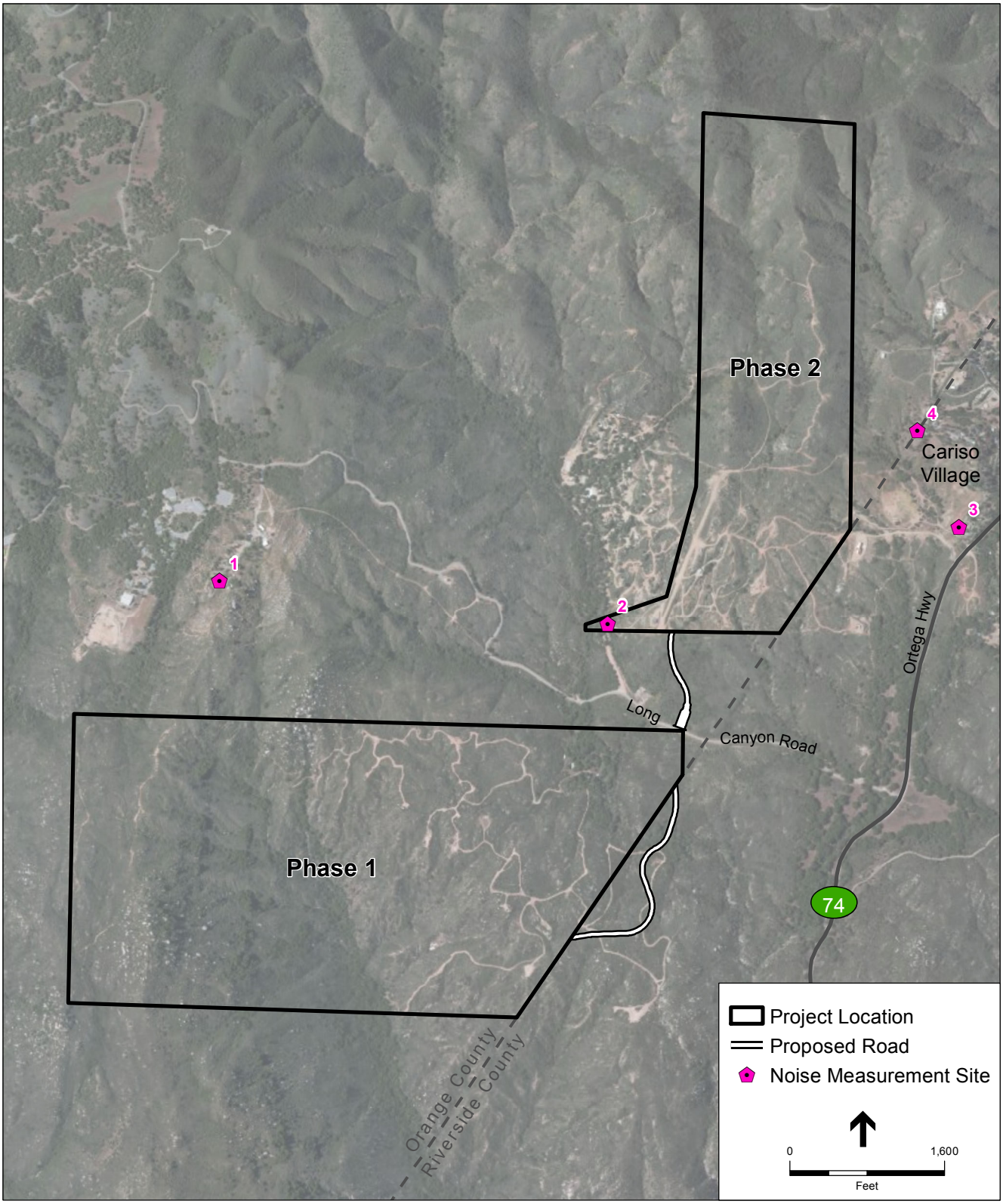
In order to characterize ambient noise conditions in the project area, short-term daytime noise level measurements were conducted on August 21, 2013 between 10:57 a.m. and 12:54 p.m. at several locations throughout the project area. Measurement sites were chosen to represent the existing condition around the project area and the location of the closest existing noise-sensitive uses include the existing residence located 160 feet from the southwestern boundary of the Phase 2 (north parcel), [1] and the single-family residence located approximately 670 feet east of Phase 2 (north parcel) near Monte Vista Street. Additionally, because an existing occupied residence is currently located within the southwest corner of Phase 2 (north parcel), a noise measurement was also conducted in that vicinity of the residence. Because the closest uses to the Phase 1 (south parcel) are substantially farther away (at 1,340 feet) project generated noise would attenuate to a much lower level than at the residences that are 160 and 670 feet from the project site. Furthermore, this EIR analysis provides an evaluation of the potential maximum effects of the project, which would not occur at uses 1,400 feet away from the project site. The noise surveys were conducted using a Metrosonics Model db-3080 sound level meter, which was calibrated prior to use to ensure the accuracy of the measurements. The results of the noise survey are shown in **Table 3.11-1**. The measurement locations are identified in **Figure 3.11-2**

Existing Roadway Noise Levels Off-Site

Existing roadway noise levels were calculated for eight roadway segments located in proximity to the project site, which are listed in **Table 3.11-2**. The roadway segments selected for analysis are those that are expected to be most directly impacted by project-related traffic; which, for the purpose of this analysis, includes the roadways that are located nearest to the project site. These roadways, when compared to roadways located further away from the project site, would experience the greatest percentage increase in traffic generated by the proposed project.

Calculation of the existing roadway noise levels was accomplished using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) and traffic volumes at the study intersections analyzed in the proposed project's TIA. The model calculates the average noise level at specific locations based on traffic volumes, average speeds, and site environmental conditions. The average daily noise levels along these roadway segments shown in **Figure 3.11-3** are presented in **Table 3.11-2**.

[1] A noise measurement at the nearest off-site sensitive receptor to Phase 2 (north parcel), which is a single-family residence located approximately 160 feet from the site's southeastern boundary, was not able to be conducted because access to the residence would require vehicle travel through a private residential road.



SOURCE: ESRI.

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Figure 3.11-2

Noise Measurement Locations

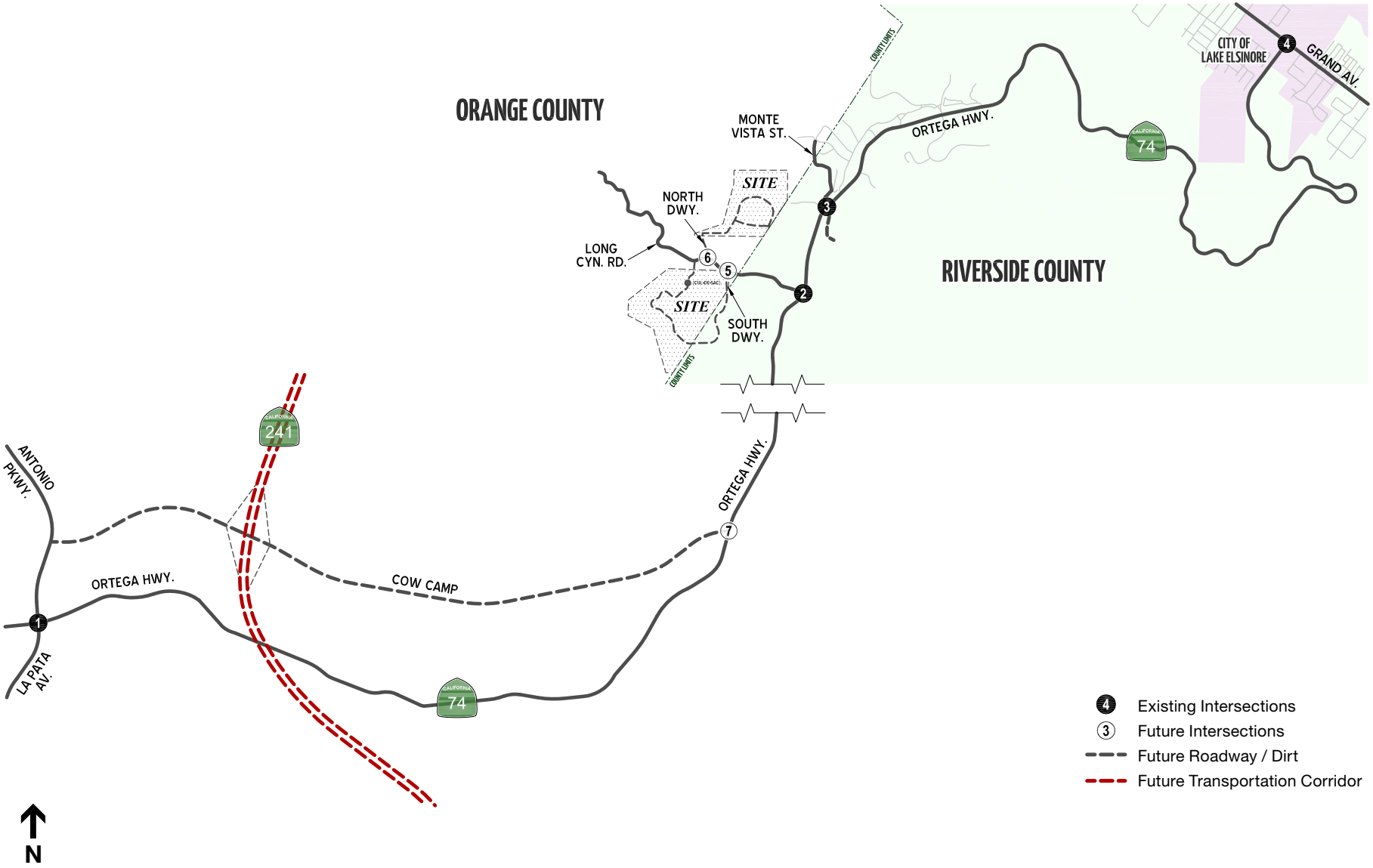
TABLE 3.11-1
EXISTING NOISE ENVIRONMENTS WITHIN THE PROJECT AREA

Location	Date and Time Period	L_{eq} dBA	L_{max} dBA	Noise Sources
Short-term Measurements				
1. Residential uses located approximately 1,340 feet to the north of Phase 1 (south parcel).	08/21/13 10:57 a.m. – 11:12 a.m.	41.6	55.5	Noise associated with birds; light breeze; occasional aircrafts overhead (e.g., planes and helicopters).
2. Mystic Oaks Private Retreat located in southwest portion of Phase 2 (north parcel).	08/21/13 11:45 a.m. – 12:00 p.m.	42.1	52.2	Noise associated with wind breeze, birds and insects, and occasional dog barking and whistle.
3. Residential uses located adjacent to Vista Road, east of Phase 2 (north parcel).	08/21/13 12:15 p.m. – 12:30 p.m.	44.9	58.5	Traffic on Ortega Highway; birds; heavy breeze on the exposed hillside; wind chimes; occasional helicopter overhead.
4. Residential uses located east of Phase 2 (north parcel), west of Monte Vista Street.	08/21/13 12:39 p.m. – 12:54 p.m.	50.1	65.3	Traffic on Ortega Highway; birds; heavy breeze on the exposed hillside, wind chimes; occasional helicopter overhead.

Source: ESA, 2014

Existing Groundborne Vibration Levels

Given the remote location of the project site in an undeveloped and densely vegetated part of the Santa Ana Mountains, no stationary sources of groundborne vibration are currently present in the project site area. The only sources of groundborne vibration in the project site vicinity would be occasional heavy-duty vehicular travel (e.g., refuse trucks and delivery trucks) on local roadways. Trucks traveling at a distance of 50 feet typically generate groundborne vibration velocity levels of around 63 VdB (approximately 0.006 in/sec PPV), and these levels could reach 72 VdB (approximately 0.016 in/sec PPV) where trucks pass over bumps in the road (FTA, 2006). In terms of PPV levels, a heavy-duty vehicle traveling at a distance of 50 feet can result in a vibration level of approximately 0.001 in/sec.



SOURCE: Urban Crossroads, 2014

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Figure 3.11-3

Roadway Noise Segments

TABLE 3.11-2
EXISTING (2013) ROADWAY NOISE LEVELS

Roadway	Roadway Segment	Existing Land Uses located along Roadway Segment	dB CNEL[a]
Ortega Highway	East of Antonio Parkway	Residential	67.2
	South of Long Canyon Road	Transient Lodging[b]	70.4
	North of Monte Vista Street	Residential	70.5
	South of Grand Avenue	Residential	65.4
Monte Vista Street	West of Ortega Highway	Residential	49.0
Antonio Parkway	North of Ortega Highway	Residential	65.0
Grand Avenue	West of Ortega Highway	Residential/Commercial	73.3
	East of Ortega Highway	Residential/Commercial	70.6

[a] Values represent noise levels from the centerline of each roadway to the property line of the nearest receptor.
[b] Ortega Oaks RV Park and Campground, which offers lodging.

Source: Urban Crossroads, 2014; ESA, 2014

Sensitive Receptors

Some land uses are more sensitive to noise levels than others due to the types of activities typically associated with the uses. Residences, hotels, schools, rest homes, and hospitals are generally more sensitive to noise than commercial and industrial land uses. Currently, existing noise-sensitive uses located in the vicinity of the project site include low density rural residential uses. As described above in the Existing Setting discussion, the nearest receptor to the project site is a single-family residence located approximately 160 feet from the boundary of Phase 2 (north parcel). In addition, one occupied residence is located within the southwest corner of Phase 2 (north parcel); however, this residence would be vacated prior to the start of project construction.

Regulatory Setting

Federal Noise Standards

There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the proposed project. With regard to noise exposure and workers, the Office of Safety and Health Administration (OSHA) regulations safeguard the hearing of workers exposed to occupational noise. Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 Code of Federal Regulations (CFR), Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

Federal Transit Authority Vibration Standards

The FTA has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in **Table 3.11-3**.

TABLE 3.11-3
CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: FTA, 2006.

In addition, the FTA has also adopted standards associated with human annoyance for groundborne vibration impacts for the following three land-use categories: Vibration Category 1 – High Sensitivity, Vibration Category 2 – Residential, and Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference.

Under conditions where there are an infrequent number of events per day, the FTA has established thresholds of 65 VdB for Category 1 buildings, 80 VdB for Category 2 buildings, and 83 VdB for Category 3 buildings.[2] Under conditions where there are an occasional number of events per day, the FTA has established thresholds of 65 VdB for Category 1 buildings, 75 VdB for Category 2 buildings, and 78 VdB for Category 3 buildings.[3] No thresholds have been adopted or recommended for commercial and office uses.

California Department of Health Services Noise Standards

The California Department of Health Services (DHS) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. These guidelines for land use and noise exposure compatibility are shown in **Table 3.11-4**. In addition, Section 65302(f) of the California Government Code requires each county and city in the state to prepare and adopt a comprehensive long-range general plan for its physical development, with Section 65302(g) requiring a noise element to be included in the general plan. The noise element must: (1) identify and appraise noise

2 "Infrequent events" is defined by the Federal Transit Administration as being fewer than 30 vibration events of the same kind per day.

3 "Occasional events" is defined by the Federal Transit Administration as between 30 and 70 vibration events of the same source per day.

problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

TABLE 3.11-4
COMMUNITY NOISE EXPOSURE (LDN OR CNEL)

Land Use	Normally Acceptable[a]	Conditionally Acceptable[b]	Normally Unacceptable[c]	Clearly Unacceptable[d]
Single-family, Duplex, Mobile Homes	50 - 60	55 - 70	70 - 75	above 75
Multi-Family Homes	50 - 65	60 - 70	70 - 75	above 75
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	above 80
Transient Lodging – Motels, Hotels	50 - 65	60 - 70	70 - 80	above 75
Auditoriums, Concert Halls, Amphitheaters	---	50 - 70	---	above 70
Sports Arena, Outdoor Spectator Sports	---	50 - 75	---	above 75
Playgrounds, Neighborhood Parks	50 - 70	---	67 - 75	above 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 75	---	70 - 80	above 80
Office Buildings, Business and Professional Commercial	50 - 70	67 - 77	above 75	---
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	above 75	---

[a] Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

[b] Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

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

[d] Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: Office of Planning and Research (OPR), 2003.

The State of California also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state pass-by standard is consistent with the federal limit of 80 dBA. The state pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by state and local law enforcement officials.

The state has also established noise insulation standards that are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA CNEL in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA CNEL. Title 24 standards are enforced by the County through the building permit and approval process.

State Vibration Standards

There are no state vibration standards applicable to the proposed project. Moreover, according to the Caltrans *Transportation- and Construction-Induced Vibration Guidance Manual* (2004), there are no official Caltrans standards for vibration. However, this manual provides guidelines for assessing vibration damage potential to various types of buildings, ranging from 0.08-0.12 in/sec PPV for extremely fragile historic buildings, ruins, and ancient monuments to 0.50-2.0 in/sec PPV for modern industrial/commercial buildings.

Orange County General Plan Noise Element

The Noise Element identifies the following uses as noise sensitive land uses: residents of all types, hospitals, rest homes, convalescent hospitals, places of worship, and schools. In addition, the County General Plan includes land use/noise compatibility guidelines to provide objectives for the compatibility of, and standards for, the integration of land uses, which are shown in **Table 3.11-5** (Table VIII-2 in the Orange County General Plan Noise Element).

TABLE 3.11-5
COMPATIBILITY MATRIX FOR LAND USE AND COMMUNITY NOISE EQUIVALENT LEVELS (CNEL)

Type of Use	65+ decibels CNEL	60 – 65 decibels CNEL
Residential	3a, b, e	2a, e
Commercial	2c	2c
Employment	2c	2c
Open Space		
Local	2c	2c
Community	2c	2c
Regional	2c	2c
Educational Facilities		
Schools (K through 12)	2c, d, e	2c, d, e
Preschool, college, other	2c, d, e	2c, d, e
Places of Worship	2c, d, e	2c, d, e
Hospitals		
General	2a, c, d, e	2a, c, d, e
Convalescent	2a, c, d, e	2a, c, d, e
Group Quarters	1a, b, c, e	2a, c, e
Hotel/Motels	2a, c	2a, c
Accessory Uses		
Executive Apartments	1a, b, e	2a, e
Caretakers	1a, b, c, e	2a, c, e

Notes:
1 = Allowed if interior and exterior community noise levels can be mitigated.
2 = Allowed if interior levels can be mitigated.
3 = New residential uses are prohibited in areas within the 65-decibel CNEL contour from any airport or air station.

Standards required for compatibility of land use and noise:
a = Interior Standard: CNEL of less than 45 decibels (habitable rooms only).
b = Exterior Standard: CNEL of less than 65 decibels in outdoor living areas.
c = Interior Standard: Leq (h) = 45 to 65 decibels interior noise level, depending on interior use.
d = Exterior Standard: Leq (h) of less than 65 decibels in outdoor living areas.
e = Interior Standard: As approved by the County for sound events of short duration such as aircraft flyovers or individual passing railroad trains.

Definitions:
Leq (h) – The A-weighted equivalent sound level average over a period of "h" hours. An example would be Leq (12) where the equivalent sound level is the average over a specified 12-hour period (such as 7:00 a.m. to 7:00 p.m.).

Source: Orange County Noise Element, Table VIII-2 and VIII-3, 2005.

Orange County General Plan Noise Element

The following General Plan Noise Element goals and policies are relevant to the proposed project:

Policy 4.1: To enforce the County's Noise Ordinance to prohibit or mitigate harmful and unnecessary noise within the County.

Policy 4.5: To require that noise from motors, appliances, air conditioners, and other consumer products does not disturb occupants of surrounding properties.

Goal 5: Noise/Land Use Planning – To fully integrate noise considerations in land use planning to prevent new noise/land use conflicts

Policy 5.1: To utilize the criteria of acceptable noise levels for various types of land uses as depicted on Tables VIII-2 and VIII-3 (Table 3.11-1 of this EIR) in the review of development proposals.

Policy 5.4: To stress the importance of building and design techniques in future site planning for noise reduction.

Goal 6: Noise Sensitive Land Uses - To identify and employ mitigation measures in order to reduce the impact of noise levels and attain the standards established by the Noise Element, for both interior areas and outdoor living areas for noise sensitive land uses.

Policy 6.2: To continue enforcement of Chapter 35 of the Uniform Building Code, currently adopted edition, and the California Noise Insulation Standards (Title 25 California Administrative Code).

Policy 6.3: To require that all new residential units have an interior noise level in living areas that is not greater than 45 decibels CNEL with it being understood that standard construction practices reduce the noise level by 12 decibels CNEL with the windows open and 20 decibels CNEL with the windows closed. Higher attenuation than listed above may be claimed if adequate field monitoring or acoustical studies are provided to and approved by the County.

Policy 6.5: All outdoor living areas associated with new residential uses shall be attenuated to less than 65 decibels CNEL.

Policy 6.7: To apply noise standards as defined in the Noise Element for noise-sensitive land uses.

Orange County Codified Ordinances

The following sections of the Orange County Codified Ordinances are relevant to the proposed project:

Section 4-6-5. Exterior Noise Standards

a) The following noise standards, unless otherwise specifically indicated shall apply to all residential property with a designated noise zone:

Noise Zone	Noise Level	Time Period
1[a]	55 dB(A)	7:00 A.M. – 10:00 P.M.
	50 dB(A)	10:00 P.M. – 7:00 A.M.

a The entire territory of Orange County, including incorporated and unincorporated territory, is designated as "Noise Zone 1."

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

b) It shall be unlawful for any person at any location within the unincorporated area of the County to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either incorporated or unincorporated, to exceed:

1. The noise standard for a cumulative period of more than thirty (30) minutes in any hour; or
2. The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or
3. The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or
4. The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one (1) minute in any hour; or
5. The noise standard plus twenty (20) dB(A) for any period of time

c) In the event the ambient noise level exceeds any of the first four (4) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Sec. 4-6-6. Interior Noise Standards

a) The following interior noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

Noise Zone	Noise Level	Time Period
1[a]	55 dB(A)	7:00 A.M. – 10:00 P.M.
	45 dB(A)	10:00 P.M. – 7:00 A.M.

[a] The entire territory of Orange County, including incorporated and unincorporated territory, is designated as "Noise Zone 1."

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

b) It shall be unlawful for any person at any location within the unincorporated area of the County to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured within any other dwelling unit on any residential property, either incorporated or unincorporated, to exceed:

1. The interior noise standard for a cumulative period of more than five (5) minutes in any hour; or

2. The interior noise standard plus five (5) dB(A) for a cumulative period of more than one (1) minute in any hour; or
3. The interior noise standard plus ten (10) dB(A) for any period of time.

c) In the event the ambient noise level exceeds either of the first two (2) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise limit category the maximum allowable noise level under said category shall be increased in reflect the maximum ambient noise level.

Section 4-6-7. Special Provisions

The following activities shall be exempted from the provisions of this article:

a) Activities conducted on the grounds of any public or private nursery, elementary, intermediate or secondary school or college.

b) Outdoor gatherings, public dances and shows, provided shall events are conducted pursuant to a license issued by the County of Orange pursuant to Title 5 of the Codified Ordinances of the County of Orange.

c) Activities conducted on any park or playground, provided such park or playground is owned and operated by a public entity.

d) Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work.

e) Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

f) All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.

g) Mobile noise sources associated with agricultural operations, provided such operations do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or any time on Sunday or a federal holiday.

h) Mobile noise sources associated with agricultural pest control through pesticide application, provided that the application is made in accordance with restricted material permits issued by or regulations enforced by the Agricultural commissioner.

i) Noise sources associated with the maintenance of real property, provided said activities take place between 7:00 a.m. and 8:00 p.m. on any day except Sunday or a federal holiday, or between the hours of 9:00 a.m. and 8:00 p.m. on Sunday or a federal holiday.

j) Any activity to the extent regulation thereof has been preempted by state or federal law.

3.11.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to noise, a project could have a significant effect on the environment if it would result in:

- 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;
- Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, exposure of people residing or working the project area to excessive noise levels.

It was determined in the NOP/Initial Study (see Appendices A1 and A2 of this EIR) that the project site is not located within an airport land use plan or within two miles of a public or private airport. The closest airport, Skylark Field Airport, is approximately seven miles east of the project site in the City of Lake Elsinore. Phase 2 (north parcel) includes the McConville Airstrip, which is a private airstrip that is no longer used, and would be converted to residential uses with implementation of the proposed project. Therefore, the proposed project would not result in noise impacts related to airports or airstrips, and no further analysis is included in this EIR.

Noise Criteria

For the purpose of determining whether the project would result in the exposure of persons to or generate noise levels that would exceed established noise standards, construction and stationary operational noise levels associated with the proposed project would result in a significant impact if the County's construction noise regulations are violated and the County's operational noise standards are exceeded.

With respect to whether the project would result in a substantial increase in noise levels, it should be noted that the state CEQA Guidelines does not define the levels at which permanent and temporary increases in ambient noise are considered "substantial." Therefore, the significance of the proposed project's ambient noise impacts is determined by comparing estimated project-related noise levels to County noise criteria in the General Plan Noise Element and the Noise Ordinance.

Generally speaking, the average healthy ear can barely perceive a noise level change of 3 dBA. A change from 3 to 5 dBA may be noticed by some individuals who are sensitive to changes in noise. A 5 dBA increase is readily noticeable, while the human ear perceives a 10 dBA increase as a doubling of sound (Caltrans, 2009). As such, for the purpose of the project's traffic noise analysis, it is assumed that a

significant impact on traffic noise levels from project operations would occur if the project would cause the ambient noise level measured at the property line of a County-identified noise-sensitive land use (i.e., residential uses, hospitals, rest homes, convalescent hospitals, places of worship, and schools) to increase by 3 dBA (CNEL) or more where the existing ambient noise level at the sensitive use is above 60 dBA CNEL, or by 5 dBA (CNEL) or more where the existing ambient noise level at the sensitive use is below 60 dBA CNEL.

The 60 dBA CNEL noise level is used to determine whether a 3 dBA or 5 dBA threshold is appropriate to assess the project's traffic noise impacts because, the County General Plan Noise Element states that areas with an ambient noise environment of 60 dBA CNEL or more is a noise-affected area; thus, the 3 dBA CNEL threshold is used in these areas. Conversely, where ambient noise levels are below 60 dBA CNEL, a 5 dBA increase is used because it is considered to be readily noticeable (Caltrans, 2009).

In regards to land uses that are not considered to be noise-sensitive (e.g., commercial, industrial, public service facilities, etc.), the County allows for the development in noise environments where the exterior noise levels exceed 65 dBA CNEL (as shown in **Table 3.11-5**); thus, a 5 dBA CNEL increase in ambient noise levels at these land uses from the project's traffic is used to assess whether a "substantial" increase in ambient noise levels would occur.

Vibration Criteria

The *CEQA Guidelines* also do not define the levels at which groundborne vibration or groundborne noises are considered "excessive." Thus, in terms of construction-related vibration impacts on buildings, the adopted guidelines/recommendations by the FTA to limit groundborne vibration based on the age and/or condition of the structures that are located in proximity to construction activity are used in this analysis to evaluate potential groundborne vibration impacts. Based on the FTA criteria, construction impacts relative to groundborne vibration would be considered significant if any of the following were to occur:

- Project construction activities would cause a PPV groundborne vibration level to exceed 0.5 in/sec at a reinforced concrete, steel, or timber building;
- Project construction activities would cause a PPV groundborne vibration level to exceed 0.3 in/sec at any engineered concrete and masonry building;
- Project construction activities would cause a PPV groundborne vibration level to exceed 0.2 in/sec at any non-engineered timber and masonry buildings; or
- Project construction activities would cause a PPV ground-borne vibration level to exceed 0.12 in/sec at any buildings "extremely susceptible to vibration damage" (i.e., a historical building).

In terms of groundborne vibration impacts associated with human annoyance, this analysis uses the FTA's vibration impact thresholds for sensitive buildings, residences, and institutional land uses under conditions where there are an infrequent number of events per day. The applicable threshold for this project is 80 VdB at residences and buildings where people normally sleep (FTA, 2006).

Any "excessive" groundborne vibration or noises that would occur from the project would be generated during project construction. During operation of the residential land uses, the proposed project would not involve the use of heavy machinery or generate heavy-duty truck trips that are often associated with large commercial or industrial uses. Operation of the vineyards would not require the use of large machinery

that could result in vibration. As such, no sources of "excessive" groundborne vibration or noise levels are anticipated to occur during project operations.

3.11.3 Methodology

The primary sources of noise associated with the proposed project would be construction activities at the project site and project-related traffic volumes associated with the operating residential development. Secondary sources of noise would include new stationary sources (such as heating, ventilation, and air conditioning units) associated with the new residential uses. The increase in noise levels generated by these activities and other sources associated with the proposed project have been quantitatively estimated and compared to the applicable noise standards and thresholds of significance.

Aside from noise levels, groundborne vibration would also be generated during construction of the proposed residential development by various construction-related activities and equipment. Thus, the groundborne vibration levels generated by these sources have also been quantitatively estimated and compared to the applicable thresholds of significance.

Construction Noise Levels

Construction noise levels were estimated by data published by the United States Environmental Protection Agency (USEPA) for general outdoor construction activities. These noise levels are then analyzed against the construction noise standards established in the County's Noise Ordinance to determine whether an exceedance of allowable noise levels would occur.

Although construction noise is exempt from land use related noise criteria as long as it occurs within allowable times pursuant to Section 4-6-7 of the County's Codified Ordinances, an increase in construction noise would be considered "substantial" based upon the allowable noise level changes and timelines identified in Section 4-6-5 of the County's Nose Ordinance, which provides the follow criteria for substantial increases in noise:

1. The noise standard for a cumulative period of more than thirty (30) minutes in any hour; or
2. The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or
3. The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or
4. The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one (1) minute in any hour; or
5. The noise standard plus twenty (20) dB(A) for any period of time.

Thus, a substial increase would occur if noise generated from the project exceeded the criteria listed above.

Roadway Noise Levels

Roadway noise levels were calculated for selected study roadway segments near the project site based on information provided in the Traffic Impact Analysis for the proposed project. The roadway segments

selected for analysis are expected to be most directly impacted by project-related traffic, which includes the roadways that are nearest to the project site. These roadways, when compared to roadways located further away from the project site, would experience the greatest percentage increase in traffic generated by the proposed project. The noise levels were calculated using the FHWA's Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and traffic volumes from the Traffic Impact Analysis.

Heating, Ventilation, and Air Conditioning Systems Noise Levels

Specific Heating, Ventilation, and Air Conditioning (HVAC) systems that would be used on the project site are unknown at this stage of the project design; however, analysis using a typical large-sized residential condenser mounted on ground level pads provides a reasonable basis for analysis. The unit used in this analysis is a Carrier 38HDR060 split system condenser. The manufacturer's noise data is provided in **Table 3.11-6**, Estimated HVAC Noise. Based on this data, the HVAC unit generates a noise level of 56 dBA at a distance of 7 feet, and a noise level of 50 dBA at a distance of 14 feet (Carrier Enterprise, 2016).

TABLE 3.11-6
ESTIMATED HVAC NOISE

Noise Levels (dB) Measured at Octave Frequencies						
125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
63.0	61.5	64.0	66.5	66.0	64.5	55.5

Hz = Hertz; kHz = kilohertz
Source Carrier Enterprise, 2016.

Groundborne Vibration Levels

Groundborne vibration levels resulting from construction activities at the project site were estimated using data published by the FTA in its *Transit Noise and Vibration Impact Assessment* (2006) document. Potential vibration levels resulting from construction of the residential uses under the proposed project are identified for off-site residential locations based on their distance from construction activities. As the County has not adopted any thresholds for construction or operational groundborne vibration impacts, the proposed project is analyzed against the vibration thresholds established by the FTA to determine whether an exceedance of allowable vibration levels would occur.

3.11.4 Project Impacts

Impact 3.11-1: Would the project result in 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?

Construction

Significant and Unavoidable Impact. Construction of the proposed project would require the use of heavy equipment during the grading and excavation activities, installation of new utilities, paving, and construction of the proposed residential buildings. Development activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of development, there would be a different mix of equipment. As such, construction activity noise levels at and near the project

site would fluctuate depending on the particular type, number, and duration of use of the various pieces of construction equipment. The USEPA has compiled data for outdoor noise levels for typical construction activities that are listed in **Table 3.11-7**. These composite noise levels from typical construction activities take into account both the number of pieces and spacing of heavy construction equipment that are typically used during each phase of construction. These noise levels would diminish rapidly with distance from the construction activity at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 84 dBA L_{eq} measured at 50 feet from the noise source to the receptor would reduce to 78 dBA L_{eq} at 100 feet from the source to the receptor, and reduce by another 6 dBA L_{eq} to 72 dBA L_{eq} at 200 feet from the source to the receptor. **Table 3.11-8** shows typical noise levels produced by various types of construction equipment.

TABLE 3.11-7
TYPICAL CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level (dBA, L_{eq})[a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

[a] Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment and 200 feet from the rest of the equipment associated with that phase.

Source: USEPA, 1971.

TABLE 3.11-8
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, L_{eq} at 50 feet)
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Crane (Mobile)	83
Dozer	85
Generator	81
Grader	85
Jack Hammer	88
Loader	85
Paver	89
Pile –Driver (Impact)	101
Pile-Driver (Sonic)	96
Roller	74
Saw	76
Scraper	89
Truck	88

Source: FTA, 2006.

Construction of the project would occur in two sequential phases; Phase 1 (south parcel) first and then Phase 2 (north parcel). The anticipated construction schedule for Phase 1 (south parcel) and Phase 2 (north parcel) are shown in Table 2-7 in Chapter 2, *Project Description*, of this EIR. Construction of Phase 1 (south parcel) would take 18 months and construction of Phase 2 (north parcel) would take 14 months. Construction of the parcels would not overlap.

Table 3.11-9 shows the estimated peak construction noise levels that would occur at the off-site sensitive uses during construction at Phase 1 (south parcel) and Phase 2 (north parcel) compared to the existing daytime ambient noise levels.

TABLE 3.11-9
EXTERIOR NOISE AT OFF-SITE SENSITIVE USES FROM PROJECT CONSTRUCTION

Off-site Sensitive Land Use	Location	Approximate Distance to Project Site Boundary (ft.)[a]	Existing Monitored Daytime Ambient Noise Levels (dBA L_{eq})	Estimated Peak Construction Noise Levels (dBA L_{eq})	Exceedance of 55 dBA Noise Standard	Increase in Ambient Noise Level (dBA L_{eq})
Residences	North of Phase 1 (south parcel), near Long Canyon Road.	1,340	41.6	60.4	5.4	18.8
Residence	East of Phase 2 (north parcel), near southeastern portion of site.	160	42.1[b]	78.9	23.9	36.8
Residences	East of Phase 2 (north parcel), adjacent to Vista Road.	1,171	44.9	61.6	6.6	16.7
Residences	East of Phase 2 (north parcel), west of Monte Vista Street.	670	50.1	66.5	11.5	16.4

[a] The approximate distances are measured from the project site to the nearest sensitive receptor property line.
[b] As noted previously, a noise measurement at this off-site sensitive receptor was not able to be conducted because access to the residence required vehicle travel through a private residential road. For the purpose of this analysis, it is assumed that ambient daytime noise level at this receptor would be similar to the daytime ambient noise level that was measured at the Mystic Oaks Private Retreat location at the southwest portion of Phase 2 (north parcel), as both of these locations are in remote areas that are located away from the local roadways of the surrounding area.
Source: ESA, 2013.

As shown in **Table 3.11-9**, the peak construction noise levels at the off-site sensitive receptors would range from 60.4 dBA L_{eq}, at the nearest residence located north of Phase 1 (south parcel), to 78.9 dBA L_{eq}, at the nearest residence located east of Phase 2 (north parcel). Thus, the construction activities associated with the proposed project would generate episodic noise levels well above the ambient noise levels currently experienced at the noise-sensitive receptors surrounding the project site. The increase in noise levels at the offsite locations during construction of the project site would be temporary in nature, and would not generate continuously high noise levels. Additionally, while the estimated construction noise levels at each of the offsite locations would be the loudest when construction activities are occurring at an area within the project site that is nearest to the offsite location, the majority of the time noise levels at these off-site locations would be reduced as construction activities conclude or move to another more distant location of the project site. Thus, the highest noise levels that would be experienced by the offsite receptors would only occur for a limited duration during construction of the proposed project.

According to Section 4-6-7 (Special Provision) of the County's Codified Ordinances, noise sources associated with construction activities are exempt from the County's noise standards provided that these activities do not occur between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday. As the construction activities associated with the proposed project would comply with these hours of operation (as included by Project Design Feature PDF-21), the proposed project would be exempted from the noise standards established in the County Codified Ordinances. Thus, impacts related to the generation of construction noise levels in excess of County standards would not occur.

However, the project's construction noise levels would result in an increase in noise levels at the nearest sensitive receptors. As shown in **Table 3.11-9**, the ambient exterior noise levels at all of the nearest off-site sensitive receptors would experience an increase in noise levels during construction of the proposed project that would result in noise higher than 55 dBA. The construction noise levels at the off-site sensitive receptors during construction would range from 60.4 dBA to 78.9 dBA. Although this noise is exempt, pursuant to the County's Noise Ordinance, a substantial increase in noise would occur. As described above, increases in ambient noise are considered "substantial" based upon Section 4-6-5 of the County's Nose Ordinance, which identifies the following increases:

- The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or
- The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or
- The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one (1) minute in any hour; or
- The noise standard plus twenty (20) dB(A) for any period of time.

As shown in **Table 3.11-9**, construction noise at each of the closest receptors would exceed these noise levels, and the duration of the noise would likely be longer than the allowable time spans. The project includes Project Design Feature PDF-21, which states that the following measures will be implemented to reduce construction-related noise:

- Construction activities will be limited to the hours between 7:00 a.m. to 8:00 p.m., Monday through Saturday, excluding federal holidays, which is consistent with the County's Noise Ordinance.
- During all excavation and grading on-site, the construction contractors will equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards to reduce construction equipment noise to the maximum extent practicable. The construction contractor will place all stationary construction equipment so that emitted noise is directed away from noise sensitive receptors.
- The construction contractor will stage equipment and material stockpiles in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors during project construction.

- The construction contractor will limit haul truck deliveries to the same hours specified for construction equipment.
- Electrically powered equipment to be used instead of pneumatic or internal combustion powered equipment, where feasible.
- Unnecessary idling of internal combustion engines (e.g., in excess of 5 minutes) will be prohibited.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only.

In addition, Mitigation Measure MM 3.11-1 would be implemented, which requires installation of temporary sound barriers in between the location of construction activities and the closest residences during construction activities that could exceed noise limits. Sound barriers can achieve between 5 and 15 dB of noise reduction (US DOT, 2016). Thus, with the use of sound barriers, temporary and intermittent construction noise at the closest residence (160 feet from the project boundary) could be reduced from 78.9 (shown in Table 3.11-8) to noise levels between 73.9 and 63.9 dBA. However, this noise is still between 18.9 and 8.9 dBA higher than the 55 dBA Nosie Ordinance criteria; and it would last longer than the time periods listed above. Thus, significant and unavoidable impacts related to short-term temporary increases in noise would occur from implementation of project construction.

Therefore, Mitigation Measure MM 3.11-2 has been included to provide notification about project activities to the sensitive uses that would be impacted by the project; and Mitigation Measure MM 3.11-3 would establish a "noise disturbance coordinator" who would be responsible for responding to noise concerns. However, even with implementation of Project Design Feature PDF-21 and Mitigation Measures MM3.11-1 through 3.11-3, short-term intermittent noise impacts generated from construction of the proposed project would be significant and unavoidable.

Mitigation Measures

MM 3.11-1 The project's construction plans and grading specifications shall state that temporary sound barriers shall be installed between the location of construction activities and the closest residences during construction activities that could exceed noise limits. The temporary sound barriers shall remain in place until the conclusion of demolition, grading, and construction activities that could exceed noise limits. The design of the sound barrier will be:

- At least 14-feet in height above grade;
- located such that it will break the line-of-sight between the sound source and the receiver;
- Consist of an impervious material with a minimum surface density of 4 pounds per square foot;
- Not have any gaps or holes between the panels or at the bottom; and
- A minimum weight of two pounds per square foot with no gaps or perforations.

MM 3.11-2 The project's construction plans and grading specifications shall state that the project construction contractor shall post signs at the construction sites that are legible at a distance of 50-feet and two weeks prior to the commencement of construction of the project, the project proponent shall send a notice to the off-site residential uses located within a 0.5-mile radius from the project boundaries. All notices and signs shall provide the dates and duration of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints.

MM 3.11-3 The project's construction plans and grading specifications shall state that the construction contractor shall establish a "noise disturbance coordinator" who shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable measures such that the complaint is resolved. All notices that are sent to residential units within 0.5-mile radius from the project boundaries and all signs posted at the construction site shall list the telephone number for the disturbance coordinator.

Operation

Less than Significant Impact. Typical stationary noise sources associated with operation of the proposed project would be HVAC systems that would be installed on the residential lots. As described above, specific HVAC systems that would be used on the project site are unknown at this stage of the project design; however, analysis using a typical large-sized residential condenser mounted on ground level pads provides a reasonable basis for analysis. The HVAC unit used in this analysis is a Carrier 38HDR060 split system condenser. This machine generates a noise level of 56 dBA at a distance of 7-feet, and a noise level of 50 dBA at a distance of 14-feet (Carrier Enterprise, 2016). Thus, at a distance of 14-feet, the noise of the HVAC unit would be within the 50 dBA CNEL nighttime noise criteria for single-family residential uses (per Section 4-6-5 of the County's Codified Ordinances).

The nearest off-site sensitive receptor is the single-family residence located approximately 160 feet east of Phase 2 (north parcel). Given the distance to this residence, the noise levels generated by project-related HVAC equipment would not be audibly perceptible above the existing ambient noise level at this offsite sensitive receptor. As the other offsite sensitive receptors are all located further away, they would also not be impacted. Therefore, noise impacts associated with the project's HVAC systems on offsite sensitive receptors would be less than significant.

The proposed project would develop residences, which are noise-sensitive receptors. Given that the average residential lot sizes of Phase 1 (south parcel) and Phase 2 (north parcel) are 23,997 square feet and 23,667 square feet, respectively, the distances between each residential dwelling unit would be sufficient to reduce noise from HVAC equipment to below the County's exterior noise standards for residential uses. As described previously, the noise of the HVAC unit would be within the 50 dBA CNEL nighttime noise criteria for single-family residential uses at a distance of 14-feet from the HVAC unit. The proposed lot sizes and landscaping areas would provide sufficient distance, such that HVAC noise from one residence would not impact another. Overall, noise impacts related to operation of the proposed project would be less than significant.

Noise/Land Use Compatibility

Less than Significant Impact. According to the County's noise/land use compatibility guidelines (refer to Table 3.11-5), new residential uses may be developed in areas where the exterior noise level environment is lower than 60 dBA CNEL. Where the exterior noise levels are between 60 to 65 dBA CNEL, residential uses may be developed provided that the interior noise levels at these residential buildings can be mitigated to 45 dBA CNEL at all habitable rooms. As shown on **Table 3.11-1**, the ambient noise levels near the project site range from 41.6 dBA to 50.1 dBA, which is lower than 60 dBA, and is compatible for new residential uses.

The future noise levels at the project site would be dominated by vehicular traffic on Long Canyon Road, the proposed driveways serving the proposed project. **Table 3.11-10** provides the estimated traffic noise levels of Long Canyon Road and the two proposed project driveways under future (2017 and 2035) traffic conditions. The future traffic volumes on these roadways were provided by the project's Traffic Impact Analysis.

TABLE 3.11-10
FUTURE (2017/2035) ROADWAY NOISE CONTOURS IN PROJECT VICINITY

Roadway Segment	CNEL at 100 feet[a]	Future (2017/2035) Average Daily Traffic Volumes[b]
Long Canyon Road, east of South Driveway	48.2	800
Long Canyon Road, between North Driveway and South Driveway	45.2	400
Long Canyon Road, west of North Driveway	39.1	100
South Driveway, south of Long Canyon Road	45.2	400
North Driveway, north of Long Canyon Road	43.9	300

ft. = feet
"--" = contour is located within the roadway lanes.
a The distance is from the centerline of the roadway.
b The traffic volumes on Long Canyon Road and the proposed project driveway are the same for both the project's near-term (2017) and long-range (2035) conditions as analyzed in the project's TIA.
Source: Urban Crossroads, 2017.

As shown in **Table 3.11-10**, traffic noise levels at 100 feet from the centerline of Long Canyon Road and the two proposed driveways would range from 39.1 dBA CNEL to 48.2 dBA CNEL. In addition, the 60 CNEL noise contour generated by traffic would be located within the roadway lanes of Long Canyon Road and the two driveways. Thus, the 60 CNEL noise contour would not reach the proposed single-family residences on either Phase 1 (south parcel) or Phase 2 (north parcel); or other existing residences in the area. Thus, noise resulting from traffic on Long Canyon Road and the project driveways would be below 60 dBA CNEL, and would be consistent with the County's noise/land use compatibility guidelines.

Thus, impacts associated with noise/land use compatibility related to traffic noise would be less than significant.

Additionally, as described above, HVAC units would generate other operational noise; however, this noise would not generate a noise/land use compatibility impact. As described above, at a distance of 14-feet, the noise of the HVAC unit would be within the 50 dBA CNEL nighttime noise criteria for single-family residential uses (per Section 4-6-5 of the County's Codified Ordinances) and the size of the residential parcels, landscaping, and fuel modification zones would provide the distance to attenuate HVAC noise to a less than significant level.

Impact 3.11-2: Would the project result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?

Construction

Less than Significant Impact. Construction activities that would occur within Phase 1 (south parcel) and Phase 2 (north parcel) would include grading and excavation, which would have the potential to generate low levels of groundborne vibration. As such, the existing residential uses located in the immediate vicinity of the project site could be exposed to the generation of excessive groundborne vibration or groundborne noise levels related to construction activities. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to structural damage at the highest levels. Site ground vibrations from construction activities very rarely reach the levels that can damage structures, but they may be perceived in buildings very close to a construction site. As part of the project, no pile driving activities would be required. The various PPV and RMS velocity (in VdB) levels for the types of construction equipment that would generally operate during the construction of the proposed project are identified in **Table 3.11-11**.

TABLE 3.11-11
VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

	Approximate PPV (in/sec)					Approximate RMS (VdB)				
Equipment	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Hoe Ram	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Loaded Trucks	0.076	0.027	0.020	0.015	0.010	86	77	75	72	68
Jackhammer	0.035	0.012	0.009	0.007	0.004	79	70	68	65	61
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	58	49	47	44	40

Source: FTA, 2006.

Based on the information presented in **Table 3.11-11**, vibration velocities could reach as high as approximately 0.089 inch-per-second PPV at 25 feet from the source activity, depending on the type of

construction equipment in use. This corresponds to a RMS velocity level (in VdB) of 87 VdB at 25 feet from the source activity.

As was described under Impact 3.11-1 above, construction activities would have the potential to impact the nearest off-site sensitive receptors to the project site, which include the single-family residences located north of Phase 1 (south parcel) and the single-family residences located east of the southeastern portion of Phase 2 (north parcel). **Table 3.11-12** shows the construction-related groundborne vibration levels that would occur at the identified off-site sensitive uses during construction of the proposed project.

TABLE 3.11-12
GROUNDBORNE VIBRATION LEVELS AT OFF-SITE SENSITIVE USES FROM PROJECT CONSTRUCTION

Offsite Sensitive Land Use	Approximate Distance to project site (feet)[a]	Estimated PPV (in/sec)	Estimated/Calculated Construction-Related Groundborne Vibration Levels (VdB)
Residences located north of Phase 1 (south parcel), near Long Canyon Road.	1,340	0.0002	35
Residence located east of Phase 2 (north parcel), near southeastern portion of site.	160	0.005	63
Residences located east of Phase 2 (north parcel), adjacent to Vista Road.	1,171	0.0003	37
Residences located east of Phase 2 (north parcel), west of Monte Vista Street.	670	0.0006	44

ft. = feet
in/sec = inches per second.
[a] The approximate distances are measured from the project site to the nearest sensitive receptor property line.
Source: ESA, 2014.

As shown in **Table 3.11-12**, the vibration velocities to occur at the off-site sensitive receptors would range from 0.0002 in/sec PPV at the residences located north of Phase 1 (south parcel) to 0.005 in/sec PPV at the nearest residence located east of Phase 2 (north parcel). None of the buildings at the identified off-site sensitive use locations are considered to be fragile structures that are extremely susceptible to vibration damage. For the purpose of this analysis, the identified off-site residential structures surrounding the project site are considered to be "non-engineered timber and masonry buildings." Based on the information shown in **Table 3.11-12**, none of the nearby residential structures surrounding the project site would be exposed to a PPV groundborne vibration level that exceeds 0.2 inches per second during construction of the proposed project. Thus, in terms of building damage, the vibration impacts at the off-site sensitive receptors would be less than significant.

In terms of human annoyance, the vibration levels forecasted to occur at the off-site sensitive receptors would range from 35 VdB at the residences located north of Phase 1 (south parcel) to 63 VdB at the nearest residence located east of Phase 2 (north parcel). As none of the nearby residential structures surrounding the project site would be exposed to vibration levels that would exceed the FTA's 80 VdB

threshold for residences or places where people may sleep during construction of the proposed project, this impact would be less than significant.

Overall, vibration impacts associated with building damage and human annoyance during project construction would be less than significant.

Operation

Less than Significant Impact. The proposed project would involve development of a residential project consisting of 72 single-family residences at the project site. Overall, the proposed residential uses would not include stationary equipment that would result in high vibration levels, which are more typical for large industrial projects. While groundborne vibration within and surrounding the project site may result from heavy-duty vehicular travel (e.g., refuse trucks and delivery trucks) on the nearby local roadways, this would not result in significant vibration impacts to the proposed project. As such, vibration impacts associated with operation of the proposed project would be less than significant.

Impact 3.11-3: Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Traffic Noise

Less than Significant Impact. The increase in traffic resulting from implementation of the proposed project would increase the ambient noise levels at sensitive uses located in proximity to the proposed project area. These concerns were addressed using the FHWA Model, which calculates the CNEL noise level for a particular set of input conditions, based on site-specific traffic volumes, distances, speeds, and/or noise barriers. The Traffic Impact Analysis prepared for the proposed project (included as Appendix J of this EIR) and an analysis of the surrounding land uses were used to forecast roadway noise levels to determine if the proposed project's vehicular traffic would result in a significant impact at noise-sensitive receptor locations in proximity to the proposed project area. The increases in noise levels at roadway segments located in proximity to the project site are identified in **Table 3.11-13**.

TABLE 3.11-13
ROADWAY NOISE LEVELS WITH PROJECT

		Noise Levels in dB CNEL[a]				
Roadway Segment	Existing Land Uses Located Along Roadway Segment	Existing Traffic Volumes	Existing Plus Project Traffic Volumes	Increase	Significance Threshold[b]	Significant?
Ortega Highway, east of Antonio Parkway	Residential	67.2	67.4	0.2	3.0	No
Ortega Highway, south of Long Canyon Road	Transient Lodging	70.4	70.7	0.3	3.0	No
Ortega Highway, north of Monte Vista Street	Residential	70.5	70.6	0.1	3.0	No

Roadway Segment	Existing Land Uses Located Along Roadway Segment	Noise Levels in dB CNEL[a]				
		Existing Traffic Volumes	Existing Plus Project Traffic Volumes	Increase	Significance Threshold[b]	Significant?
Ortega Highway, south of Grand Avenue	Residential	65.4	65.5	0.1	3.0	No
Monte Vista Street, west of Ortega Highway	Residential	49.0	49.0	0.0	5.0	No
Antonio Parkway, north of Ortega Highway	Residential	65.0	65.1	0.1	3.0	No
Grand Avenue, west of Ortega Highway	Residential	73.3	73.3	0.0	3.0	No
Grand Avenue, east of Ortega Highway	Residential	70.6	70.6	0.0	3.0	No

a Values represent noise levels from the centerline of each roadway to the approximate receptor property line.

b For the purpose of this analysis, it is assumed that a significant impact on traffic noise levels from project operations would occur if the project would cause the ambient noise level measured at the property line of a County-identified noise-sensitive land use (i.e., residential uses, hospitals, rest homes, convalescent hospitals, places of worship, and schools) to increase by 3 dBA (CNEL) or more where the existing ambient noise level at the sensitive use is above 60 dBA CNEL, or by 5 dBA (CNEL) or more where the existing ambient noise level at the sensitive use is below 60 dBA CNEL.

Source: Urban Crossroads, 2017; ESA, 2014.

As shown in **Table 3.11-13**, the proposed project would increase local noise levels by a maximum of 0.3 dBA CNEL at the roadway segment of Ortega Highway, south of Long Canyon Road. As this noise increase would not exceed the identified threshold of significance, this impact would be less than significant. In addition, as the other roadway segments that are located even further away from the project site would experience less traffic increases due to the proposed project, the increase in local noise levels at these roadway segments would also not exceed the thresholds of significance, and impacts would be less than significant.

HVAC Equipment Noise

Less than Significant Impact. As described under Impact 3.11-1, HVAC units would generate other operational noise; however, this noise would not generate a substantial permanent increase in ambient noise levels. As described above, at a distance of 14-feet, the noise of the HVAC unit would be within the 50 dBA CNEL nighttime noise criteria for single-family residential uses (per Section 4-6-5 of the County's Codified Ordinances) and the size of the residential parcels, landscaping, and fuel modification zones would provide the distance to lower HVAC noise to a less than significant level. Thus, permanent increase in ambient noise levels related to HVAC equipment noise would be less than significant.

Impact 3.11-4: Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Significant and Unavoidable Impact. As described under Impact 3.11-1, the construction-related noise levels associated with the proposed project would result in a substantial temporary increase in ambient

noise levels at the nearest offsite sensitive receptors. **Table 3.11-9** shows that construction noise levels at off-site sensitive receptors during construction would range from 60.4 dBA to 78.9 dBA. Thus, the project includes Project Design Feature PDF-21, implements measures to reduce construction-related noise that include: limiting construction and haul hours, location of equipment and staging areas, proper equipment use, and overall noise reduction methods. In addition, Mitigation Measure MM 3.11-1 requires installation of temporary sound barriers to reduce construction noise. However, as detailed previously, construction noise would continue to exceed Nosie Ordinance criteria; thus, significant impacts related to short-term temporary increases in noise would occur from implementation of project construction. Mitigation Measure MM 3.11-2 has been included to provide notification about project activities to the sensitive uses that would be impacted by the project; and Mitigation Measure MM 3.11-3 would establish a "noise disturbance coordinator" who would be responsible for responding to noise concerns. However, substantial temporary or periodic increases in ambient noise levels would occur from construction of the proposed project, and impacts would be significant and unavoidable.

3.11.5 Cumulative Impacts

Cumulative noise assessment considers development of the proposed project in combination with ambient growth and other development projects within the vicinity of the proposed project. As noise is a localized phenomenon, and drastically reduces in magnitude as distance from the source increases, only projects and ambient growth in the nearby area could combine with the proposed project to result in cumulative noise impacts. Similarly, the geographic area associated with cumulative construction noise impacts would be limited to areas directly affected by construction noise associated with the proposed project and the locations of the identified cumulative projects. The projects listed in Table 3-1 in Chapter 3, are not in the immediate vicinity of the project area. As shown in Figure 2-15, the closest cumulative project sites are located approximately 2.4 miles from the project site in the City of Lake Elsinore. The distance between the project site and the nearest related project, and the attenuation characteristics of noise and vibration, no receptors would be exposed to audible noise or perceptible levels of vibration from both of these sites simultaneously. Therefore, noise from construction and construction related vibration from the proposed project would not combine with any of the other foreseeable projects to result in a cumulative impact.

Cumulative mobile source noise impacts would occur primarily as a result of increased traffic on local roadways due to the proposed project and related projects within the study area. Therefore, cumulative traffic-generated noise impacts have been assessed for both the future year 2017 (near-term) and future year 2035 (long-range) cumulative base traffic volumes with the proposed project on the roadway segments in the project vicinity. The noise levels associated with existing traffic volumes and cumulative base traffic volumes with the proposed project (i.e., future cumulative traffic volumes) in 2017 and 2035 are identified in **Tables 3.11-14** and **3.11-15,** respectively. The comparison of the future year traffic noise levels in 2017 and 2035 against existing (baseline) traffic noise levels allows for identification of the incremental increase in noise levels that would be generated by cumulative development.

As shown in **Table 3.11-14**, cumulative development along with the proposed project in 2017 would increase local noise levels by a maximum of 0.6 dBA CNEL at the roadway segments of Ortega

Highway, south of Long Canyon Road and north of Long Canyon Road, and at the roadway segment of Antonio Parkway, north of Ortega Highway. As the increase in roadway noise at these roadway segments would not exceed 3.0 dBA CNEL, the noise increases at these segments would not be substantial. As all of the remaining roadways would be exposed to even lower noise level increases, the noise increases at these roadway segments would also not be substantial. Therefore, the cumulative impact associated with mobile source noise in 2017 would be less than significant.

TABLE 3.11-14
CUMULATIVE (2017) ROADWAY NOISE IMPACTS

		Noise Levels in dBA CNEL[a]				
Roadway Segment	**Existing Land Uses Located Along Roadway Segment**	**Existing (2013) Traffic Volumes**	**Future (2017) With Project Traffic Volumes**	**Increase**	**Significance Threshold[b]**	**Significant?**
Ortega Highway, east of Antonio Parkway	Residential	67.2	67.8	0.6	3.0	No
Ortega Highway, south of Long Canyon Road	Transient Lodging	70.4	71.0	0.6	3.0	No
Ortega Highway, north of Monte Vista Street	Residential	70.5	70.9	0.4	3.0	No
Ortega Highway, south of Grand Avenue	Residential	65.4	65.8	0.4	3.0	No
Monte Vista Street, west of Ortega Highway	Residential	49.0	49.0	0.0	5.0	No
Antonio Parkway, north of Ortega Highway	Residential	65.0	65.6	0.6	3.0	No
Grand Avenue, west of Ortega Highway	Residential	73.3	73.8	0.5	3.0	No
Grand Avenue, east of Ortega Highway	Residential	70.6	71.1	0.5	3.0	No

[a] Values represent noise levels from the centerline of each roadway to the approximate receptor property line.

[b] For the purpose of this analysis, it is assumed that a significant impact on traffic noise levels from project operations would occur if the project would cause the ambient noise level measured at the property line of a County-identified noise-sensitive land use (i.e., residential uses, hospitals, rest homes, convalescent hospitals, places of worship, and schools) to increase by 3 dBA (CNEL) or more where the existing ambient noise level at the sensitive use is above 60 dBA CNEL, or by 5 dBA (CNEL) or more where the existing ambient noise level at the sensitive use is below 60 dBA CNEL.

Source: Urban Crossroads, 2017; ESA, 2014.

As shown in **Table 3.11-15**, cumulative development along with the proposed project in 2035 would increase local noise levels by a maximum of 2.8 dBA CNEL at the roadway segments of Antonio Parkway, north of Ortega Highway, and Grand Avenue, east of Ortega Highway. As the increase in roadway noise at these roadway segments would not exceed 3.0 dBA CNEL, the noise increases at these segments would not be substantial. As all of the remaining roadways would be exposed to even lower noise level increases than 2.8 dBA CNEL, the noise increases at these roadway segments would also not be substantial. Therefore, the cumulative impact associated with mobile source noise in 2035 would be less than significant.

TABLE 3.11-15
CUMULATIVE (2035) ROADWAY NOISE IMPACTS

		Noise Levels in dBA CNEL[a]				
Roadway Segment	**Existing Land Uses Located Along Roadway Segment**	**Existing (2013) Traffic Volumes**	**Future (2035) With Project Traffic Volumes**	**Increase**	**Significance Threshold[b]**	**Significant?**
Ortega Highway, east of Antonio Parkway	Residential	67.2	69.6	2.4	3.0	No
Ortega Highway, south of Long Canyon Road	Transient Lodging	70.4	72.5	2.1	3.0	No
Ortega Highway, north of Monte Vista Street	Residential	70.5	72.4	1.9	3.0	No
Ortega Highway, south of Grand Avenue	Residential	65.4	67.0	1.6	3.0	No
Monte Vista Street, west of Ortega Highway	Residential	49.0	49.0	0.0	5.0	No
Antonio Parkway, north of Ortega Highway	Residential	65.0	67.8	2.8	3.0	No
Grand Avenue, west of Ortega Highway	Residential	73.3	76.0	2.7	3.0	No
Grand Avenue, east of Ortega Highway	Residential	70.6	73.4	2.8	3.0	No

[a] Values represent noise levels from the centerline of each roadway to the approximate receptor property line.

[b] For the purpose of this analysis, it is assumed that a significant impact on traffic noise levels from project operations would occur if the project would cause the ambient noise level measured at the property line of a County-identified noise-sensitive land use (i.e., residential uses, hospitals, rest homes, convalescent hospitals, places of worship, and schools) to increase by 3 dBA (CNEL) or more where the existing ambient noise level at the sensitive use is above 60 dBA CNEL, or by 5 dBA (CNEL) or more where the existing ambient noise level at the sensitive use is below 60 dBA CNEL.

Source: Urban Crossroads, 2017; ESA, 2013.

3.12 Population and Housing

This section describes the existing and projected population and housing characteristics of the project region and analyzes the proposed project's potential impact on population and housing. New housing can result in substantial population growth and the need for additional employment opportunities in the region. Demographic data presented in this section is based on the Southern California Association of Governments (SCAG) 2016 Growth Forecasts (SCAG, 2016), the County of Orange 2013 Housing Element (County, 2013), and 2015 California Department of Finance data (DOF, 2015) that is based on 2010 Census data.

3.12.1 Environmental Setting

Population

The County of Orange comprises 34 cities as well as unincorporated communities. In 2016 had a total population of 3,183,011 people, with approximately 125,420 of those people living in unincorporated areas (DOF, 2016). The population in Orange County increased by 5.8 percent, from 2,846,289 in 2000 to 3,010,232 in 2010; and then increased another 5.7 percent between 2010 and 2016. **Table 3.12-1** shows population trends in unincorporated Orange County and Orange County as a whole.

TABLE 3.12-1
RECENT POPULATION TRENDS: UNINCORPORATED ORANGE COUNTY AND ORANGE COUNTY

	2000	2010	2016	2035	2000-2010 % Change	2010-2014 % Change	2014-2035 % Change
Unincorporated Orange County	168,165	121,160	125,420	177,900	-28.0	3.5	41.8
Total Orange County	2,846,289	3,010,232	3,183,011	3,431,200	5.8	5.7	7.8

SOURCE: State of California Department of Finance, E-5 Population and Housing Estimates, 2016 and SCAG 2016 Growth Forecast.

SCAG's population, housing, jobs and income projections for the six-county southern California region estimate that the County will experience growth over the next 19 years (SCAG, 2016). SCAG estimates Orange County's population will increase by 7.8 percent between 2016 and 2035. Unincorporated Orange County projected growth rate is expected to be well above the entire County's rate, with an overall 42 percent growth between 2014 and 2035.

Housing

Orange County contained approximately 1,075,705 housing units in 2016. Of these, 40,583 were in unincorporated portions of the County (DOF, 2016). Housing types in Orange County in 2016 are listed in **Table 3.12-2**. As shown, compared to incorporated areas, unincorporated Orange County has a higher percentage of single-family houses and a similar percentage of multi-family housing. Single-family (detached) homes comprise approximately 76 percent of the units in unincorporated areas; whereas, in city areas, approximately 51 percent of housing units are single-family (detached) homes. Similarly, there is a greater percentage of larger multi-family residential developments in incorporated areas (approximately 26 percent) than in unincorporated areas of the County (approximately 10 percent).

TABLE 3.12-2
HOUSING BY TYPE (2016)

	Unincorporated Orange County Total Units		County of Orange Total Units	
Unit Type	**Number**	**Percent**	**Number**	**Percent**
Single-family detached	30,895	76	544,263	51
Single-family attached	4,215	10	129,191	12
Multi-family (2-4 units)	854	2	92,887	9
Multi-family (5+ units)	3,988	10	275,866	26
Mobile homes	631	2	33,492	3
Total	**40,583**		**1,075,705**	

SOURCE: California Department of Finance, 2016 Table 2: E-5 City/County Population and Housing Estimates.

Housing Projections

Future population and housing growth projects, as determined by the SCAG RTP Growth Forecast in 2016, for the unincorporated areas of Orange County are shown in **Table 3.12-3**.

TABLE 3.12-3
SCAG POPULATION AND HOUSING PROJECTIONS FOR UNINCORPORATED ORANGE COUNTY

	2016	2020	2035
Population	125,420	137,700	177,900
Households	40,583	43,100	56,100

SOURCE: California Department of Finance, 2016; SCAG, 2016.

Future population and housing growth projects, as determined by SCAG in 2016, for Orange County as a whole are shown in **Table 3.12-4.**

TABLE 3.12-4
SCAG POPULATION AND HOUSING PROJECTIONS FOR ORANGE COUNTY

	2016	2020	2035
Population	3,183,011	3,271,100	3,431,200
Households	1,075,705	1,074,700	1,135,300

SOURCE: California Department of Finance, 2016; SCAG, 2016.

Regulatory Setting

SCAG Regional Comprehensive Plan

SCAG's Regional Comprehensive Plan (RCP) serves as a comprehensive planning guide, focusing on growth through the year 2035. The primary goals of the RCP are to improve the standard of living, enhance the quality of life, and promote social and economic equity. Within

the RCP, issues related to housing availability and growth are addressed primarily in the Land Use and Housing chapter. This chapter identifies land use and housing challenges of the region.

SCAG Regional Transportation Plan

SCAG's Regional Transportation Plan (RTP) provides forecasts of population, households, and employment levels for counties, subregions, cities, and census tract within SCAG's jurisdiction. The primary goal of the 2012–2035 RTP is to increase mobility for the region's residents and includes a "strong commitment to reduce emissions from transportation sources to comply with [Senate Bill (SB)] 375, improve public health, and meet the National Ambient Air Quality Standards (NAAQS) as set forth by the federal Clean Air Act." SCAG's population and household projections for Orange County as a whole and unincorporated, are presented in **Tables 3.12-1**, **3.12-3**, and **3.12-4**, previously.

SCAG Regional Housing Needs Assessment

State law requires that jurisdictions provide their fair share of regional housing needs. The California Department of Housing and Community Development (HCD) is mandated to determine the state-wide housing need. In cooperation with HCD, local governments and councils of government are charged with determining the city's or regions existing and projected housing need as a share of the state-wide housing need. The current Regional Housing Needs Assessment (RHNA) (adopted November 2012) identifies housing needs in each SCAG jurisdiction and allocates a fair share of that need to every community. The RHNA indicates that unincorporated Orange County needs to supply a total of 5,272 housing units for the planning period between 2014 and 2021 (SCAG, 2012a). This total is distributed by income category as shown in **Table 3.12-5**.

TABLE 3.12-5
REGIONAL HOUSING GROWTH NEEDS UNINCORPORATED ORANGE COUNTY

Very Low	Low	Moderate	Above Moderate	Total
2,119*	879	979	2,174	5,272
22.3%	18.1%	20%	39.6%	100%

NOTE: Half (1,060) of these Very Low units are assumed to be in the extremely-low category.
SOURCE: SCAG, 2012.

County of Orange General Plan—Housing Element

The County of Orange's Housing Element, adopted in 2013, provides guidelines for the maintenance and expansion of the housing supply to meet the present and future needs of the County's population. The element addresses the need for housing for all economic segments in unincorporated Orange County and provides goals, strategies and actions to meet this need. Furthermore, the County's Housing Element identifies programs and resources required for the preservation, improvement and development of housing to meet the existing and projected needs of its population.

3.12.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to population and housing, a project could have a significant effect on the environment if it would:

- 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);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

It was determined in the Notice of Preparations/Initial Studies (see Appendices A1 and A2 of this EIR) that the project would develop residential housing in a largely undeveloped area, where only one housing unit currently exists, which would be vacated prior to implementation of the proposed project. As a result, no housing or people would be displaced due to implementation of the project, and the construction of replacement housing elsewhere would not be necessary. Thus, impacts related to displacement of either homes or people that would require construction of replacement housing elsewhere would not occur. Therefore, no analysis of that significance criterion is included in this EIR.

3.12.3 Methodology

The methodology used to determine impacts on population began with data collection regarding existing population and housing trends, which was obtained from the State of California Department of Finance, SCAG, and the County of Orange.

3.12.4 Project Impacts

Impact 3.12-1: Would the project 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. Based on the 2010 U.S. Census data, the average household size for the unincorporated areas of Orange County is 3.2 persons per household. The proposed project includes the development of 72 single-family residences. Assuming an average household size of 3.2 and the addition of 72 single-family residential units, the proposed project would accommodate a net population increase of approximately 230 new residents. As shown in **Table 3.12-3**, by the year 2035, SCAG estimates the population of unincorporated Orange County to be 177,900, an increase of 52,480 residents from the 2016 population of 125,420 residents. Based on this number, the development of the proposed residential uses would constitute approximately 0.14 percent of the anticipated growth in unincorporated area Orange County. As shown in **Table 3.12-4**, SCAG estimates the population for Orange County in 2035 to be 3,431,200 persons, an increase of 248,189 persons, based on the 2016 population of 3,183,011. The project

would constitute approximately 0.09 percent of the anticipated growth in Orange County. The population increase that would be induced by the project does not exceed SCAG's growth projections for the County.

In addition, the proposed project would develop 27 single-family residences on the 584.1-acre project site that has an existing zoning designation of General Agricultural (A1), which allows residential development at a maximum density of 0.25 dwelling unit per acre (or four acres per dwelling unit). Thus, the current zoning would allow build out of 146 dwelling units on the project site.

Although the proposed project proposes to change the General Plan Land Use of designation to Rural Residential (1A), which allows a minimum density of 0.25 to 0.5 dwelling units per acre, (or two to four units per acre), the proposed project would only develop 72 residential units, and the remainder of the project site would consist of preserved open space, landscaping, and fuel modification areas that would not be developed. Therefore, the proposed project would result in fewer residential units than the allowable by the existing zoning criteria, and would be consistent with the growth projections in the County's General Plan, which is based on land use and zoning designations. Therefore, the project would not directly induce substantial population or housing growth in the area, and impacts would be less than significant.

The proposed project would provide single-family housing in Orange County and would be meeting an existing housing demand that is already accounted for in the County's 2013 Housing Element, which shows that 2,174 above moderate income level housing units are needed. In addition, the proposed project includes development of 24.5 acres of vineyards throughout both phases of the project. Production and/or wine making facilities are not included in the proposed project. However, it is anticipated that the grapes grown on the site would be harvested and sold. It is estimated that five employees would be needed on a year-round basis (daily) to oversee the vineyard production, with peaks of up to 25 employees needed during harvest season (described in Section 2.0, *Project Description*).

Therefore, the proposed project would result in a limited demand for long-term landscape maintenance, open space maintenance, vineyard production management, and other service employment opportunities associated with residential and vineyard uses. Although the proposed project in itself would be providing housing, it is unlikely that service workers would be residing on-site. Service workers would likely be coming from nearby Lake Elsinore and the surrounding communities. Because the need for employment would be limited to the 72 single-family residences and 24.5 acres of vineyards, the increased need for employment would be minimal. Needs related to the HOA would be managed by a community management firm that would not be located on or near the project site. As a result, impacts related to growth from employment generated by the project would be less than significant.

Infrastructure improvements would be necessary to accommodate the development of the new residential uses, including improvements to Ortega Highway, extension of water infrastructure, and development of wastewater facilities. Improvements would be sized to specifically serve the on-site development or would provide safety improvements, such as the improvements to Ortega Highway at the Long Canyon Road intersection. These improvements consist of installing a northbound 12-foot wide acceleration on Ortega Highway at Long Canyon Road, installing a

northbound 12-foot wide left turn lane on Ortega Highway at Long Canyon Road, and installation of a minimum 22-foot wide southbound deceleration lane on Ortega Highway from Long Canyon Road to 160 feet to the north. These improvements would all occur within the existing paved Ortega Highway right-of-way and would provide existing pavement area, turn lanes, and acceleration lanes that would enhance safety of the existing roadway. The addition of acceleration and turn lanes to Ortega Highway at the Long Canyon Road intersection would not induce population growth, and does not provide additional capacity along the overall highway.

Water service would be provided by an extension from an existing six-inch water main that is currently providing potable water to up gradient communities along Ortega Highway. Water infrastructure would be extended only into the project area to serve the proposed residences and associated landscaping. The extension would not be designed to provide service to areas beyond those proposed in this project, or provide capacity to serve additional areas. Additionally, because this line is currently installed and available for connections, connection to this line would not induce population growth in areas outside of the project area.

Wastewater would be disposed of through the use of individual septic tanks located on each residential lot. This wastewater infrastructure would be sized specifically to serve each lot, and the proposed project would not develop or provide excess wastewater treatment design capacity to serve areas beyond the project site. As a result, installation and operation of the wastewater infrastructures would not induce substantial growth.

3.12.5 Cumulative Impacts

The geographic area in which cumulative impacts to population and housing could occur is southern Orange County, and adjacent areas within Riverside County that could be influenced by development within the project area. Implementation of the proposed project would result in a net increase in the County's residential population by an estimated total of 230 persons. As shown in **Table 3.12-6**, cumulative population increases from the projects listed above would be approximately 13,606 additional residents. Based on SCAG's 2016 Integrated Growth Forecast, this would represent an approximate 5.5 percent of the anticipated growth in Orange County between 2016 and 2035.

Project development, in combination with other development projects within the project vicinity and County, would result in a cumulative increase in population. However, this growth in the County's residential population falls below the anticipated development of the existing zoning of the project site, within the SCAG growth estimates, and would contribute to meeting the County's RHNA requirements. Because build out of the project would result in growth that is far less than identified by the County's existing zoning code, implementation of the project would not result in cumulatively considerable direct population and growth impacts. Impacts would be less than significant.

TABLE 3.12-6
CUMULATIVE POPULATION INCREASE

Name/Address	Description	Increased Population [a]
Rancho Plan Planned Community	The recently approved Master Plan allows for the development of a maximum of 3,291 dwelling units, parkland, an urban activity center and a neighborhood center on 895 of the 1,680 total acres of Planning Area 2.	10,531
Lakeshore Point / Corner of LeHarve Avenue and Riverside Drive	The project includes 150 apartment units and 47 detached single-family units.	480
The Villages at Lakeshore / Corner of Riverside Drive and Grand Avenue	This project would require a Specific Plan, Amendment (No. 1) and would develop 163 condominium detached dwelling units on 19.7 acres.	522
Robinson Ridge / East of the intersection of Trabuco Canyon Road and Trabuco Creek Road, south of Trabuco Creek Road, and west of the Cleveland National Forest boundary.	The 92-acre project site has the potential to develop up to 612 units, consistent with the Foothill/Trabuco Specific Plan.	1,958
21522 Plano Trabuco Road	The project would develop 36 townhomes on a vacant site along Plano Trabuco Road.	115
	Total	**13,606**

[a] Population is based on 3.2 persons per household; the same as was used to calculate the project's population.
SOURCE: County of Orange, County of Riverside, City of Lake Elsinore, City of Mission Viejo, City of Rancho Santa Margarita; 2017.

The project would extend some needed infrastructure (i.e. water pipelines and electrical lines) into the project area to serve the project. This extension of infrastructure would not be designed or have the capacity to serve areas or residences other than those proposed as part of the project. In addition, the project would preserve 71 percent of the project area for open space; and Cleveland National Forest areas adjacent to the project would not be developed (Project Design Feature PDF-1). As a result, other portions of the County would not be influenced by development within the project area, and the proposed project would not induce growth.

Furthermore, the cumulative projects listed above are not in the vicinity of the project site, and infrastructure upgrades and extensions that may be included in cumulative projects would not affect or be related to those required by the proposed project. Therefore, the project and other projects in the area, when considered cumulatively, would not directly or indirectly induce substantial growth. Impacts are less than significant.

3.13 Public Services

This section analyzes the potential impacts to public services from the proposed project, including fire protection, law enforcement services, schools, hospitals, and libraries that serve the project area, and proposes mitigation measures as necessary.

3.13.1 Environmental Setting

Existing Conditions

Fire Protection and Emergency Services

Orange County Fire Authority. The Orange County Fire Authority (OCFA) provides structural and emergency medical services, and all fire prevention services (Planning and Development Department, Safety and Environmental Services and Pre-Fire Management) to all developments within unincorporated Orange County; as well areas of the Cleveland National Forest that are within Orange County.

The OCFA is divided into seven geographical divisions that are divided into battalions. The project site is located in Division III, Battalion seven (OCFA, 2016a). OCFA currently has 72 fire stations that provide regional emergency response to all fires, medical aids, hazardous materials incidents fires, aircraft fire and services for the region (OCFA, 2016). The closest OCFA fire stations to the project site are Fire Station No. 56, located at 56 Sendero Way in San Juan Capistrano, which is approximately 15 miles (a minimum of 25 minutes) from the project site; and Fire Station No. 7, located on 31865 Del Obispo Street in San Juan Capistrano, which is approximately 18 miles (a minimum of 28 minutes) southwest from the project site (OCFA, 2016).

For a fire response call, OCFA requires a minimum of three engines, one truck, one battalion chief, and one medic unit to provide an Effective Response Force (ERF) for a single-family residence. Due to the travel limits to the project site, OCFA classifies the project area as "Undeveloped Rural Areas" for response time standards, which is "as soon as possible" (OCFA, 2016).

Riverside County Fire Department. The Riverside County Fire Department also provides services in the project vicinity through the El Cariso Fire Station is located at 32353 Ortega Highway, approximately 1.5 miles from the project site. In addition, the following other Riverside County Fire Stations are located within 10 miles of the project site:

- Riverside County Fire Station 74 is located at 35420 Calle Grande in Lake Elsinore, 6.7 miles (a minimum of 13 minutes) from the project site.
- Riverside County Fire Station 85 is located at 29405 Grand Avenue in Lake Elsinore, 9.2 miles (a minimum of 16 minutes) from the project site.
- Riverside County Fire Station 11 is located at 33020 Maiden Lane in Lake Elsinore, 8.4 miles (a minimum of 14 minutes) from the project site (Google Maps, 2016).

The OCFA is the first responder to all calls within its service area. However, the OCFA has an Automatic Aid Agreement with the Riverside County Fire Department for a geographical area that includes the project site. The agreement states that should an emergency occur, both agencies would respond promptly to the emergency. Because the El Cariso Fire Station is the closest facility to the project site (approximately 1.5 miles away) it would generally be the first responding station to emergency calls for service from the project site. The OCFA would respond to non-emergency service calls.

Police Protection

Orange County Sheriff Department. Police protection services are provided by the Orange County Sheriff Department (OCSD). The Departments headquarters is located at 550 North Flower Street in Santa Ana, California. In April 2015, the South Operations Division split into the Southwest Operations Division and the Southeast Operations Division. The project site is located within the jurisdiction of the Southeast Operations Division, which includes the Cities of Lake Forest, Mission Viejo, Rancho Santa Margarita; and the South unincorporated communities of Coto de Caza, Ladera Ranch, Las Flores, Rancho Mission Viejo, Wagon Wheel, Trabuco Canyon, and parts of the Cleveland National Forest. The Southeast Operations Division substation is located at 20202 Windrow Drive, Lake Forest, 92630 (OCSD, 2017).

The Southeast Operations Division deploys approximately 70 patrol cars during each 24-hour period to provide law enforcement services, and has 208 staff members and 167 deputy sheriffs. However, there is a long-term need for 10 additional Deputy Sheriffs to serve the unincorporated south Orange County area (OCSD, 2017). Deputy Sheriffs are assigned to a variety of tasks, including patrol, traffic enforcement, juvenile services, and supervision (OCSD, 2017).

Between January 1, 2016 and December 30, 2016, the average OCSD response time for emergency calls for service in the unincorporated south Orange County area was 8:39 minutes, and the average response time to a second level emergency was 16:03 minutes (OCSD, 2017a). Thus, response times to the project site are anticipated to range between 8 and 16 minutes, depending on the type of service call.

Riverside County Sheriff Department. In addition, the Riverside County Sheriff's Station located at 333 W Limited Avenue in Lake Elsinore is 11 miles from the project site. This station serves El Cariso Village, which is approximately 1,500 feet east of the project area. In addition, the Lake Elsinore Station also serves the communities of: Alberhill, Glen Eden, Glen Ivy Hot Springs, Good Hope, La Cresta, Lake Elsinore, Lakeland Village, Meadowbrook, Ortega Hills, Temescal Valley, Wildomar, and Warm Springs.

The Lake Elsinore Sheriff's Station currently has 107 sworn officers and 23 non-sworn employees. The current staffing throughout unincorporated Riverside County is 1.04 deputies per 1,000 residents, which is lower than the County's goal of 1.2 deputies per 1,000 residents (Riverside County Sheriff, 2016).

Average response times from the Lake Elsinore Sheriff's Station vary due to the differing priorities of each service call. Law enforcement calls for services are prioritized per the following:

- **Priority One:** Requires immediate response and May be assigned for Code 3 response (upon the Watch Commander's approval) using lights and sirens. Includes any situation where a person may be in immediate danger such as injury traffic accidents in a contract city, crimes against persons where the suspect is still present, or back up of another deputy/officer in an urgent situation.
- **Priority Two:** Requires immediate response and may not be assigned Code 3 (lights and siren) response. Includes crimes which have just occurred and the suspect has left the area and the victim is not in any further danger; any incident with potential of quickly escalating to a crime against person, i.e., family disturbance, custody disputes where all parties are present; bomb threats; any incident where a delay in response could impede further investigation, i.e., deceased person or situation involving delicate evidence; alarm calls; or similar circumstances.
- **Priority Three:** Includes calls where the informant is to be contacted for a report only; most routine situations where there is an informant; suspicious person, loud parties or similar disturbances.
- **Priority Four:** Includes calls of a non-emergency nature involving no contact with an informant; situation with no potential for escalation abandoned vehicles; parking problems; routine patrol checks.

Table 3.13-1 shows the number of service calls and average response times from the Lake Elsinore Sheriff's Station to the communities west of Lakeland Village, which includes El Cariso Village. In 2015 and 11 months of 2016, the average response time for priority one calls was 11.2 minutes and 12.2 minutes (Riverside County Sheriff, 2016). As shown in Table 3.13-1, there have been a relatively low number of priority one calls.

TABLE 3.13-1
LAKE ELSINORE SHERIFF STATION SERVICE CALLS / RESPONSE TIMES TO AREAS WEST OF LAKELAND VILLAGE, INCLUDING EL CARISO VILLAGE

2015		
Call Priority	**Total Calls**	**Average Response Time**
Priority 1*	20	11.2 minutes
Priority 2	304	31.4 minutes
Priority 3	359	61.4 minutes
Priority 4	175	87.6 minutes
January – November 2016		
Priority 1*	12	12.2 minutes
Priority 2	350	27.9 minutes
Priority 3	382	52.1 minutes
Priority 4	183	74.6 minutes

* Source: Riverside County Sheriff, 2016.

Of the service calls listed in Table 3.13-1, an average of approximately 12-15 calls per year are from the El Cariso area; and the only constraints in serving the area is the weekend traffic on the single-lane portions of Ortega Highway and weather factors, such as heavy rains, snow, and fire (Riverside County Sheriff, 2016).

The Lake Elsinore Sheriff Station follows the California Disaster and Civil Defense Master Mutual Aid Agreement, as on file with the State Disaster Council. Riverside County and Orange County are both participants in the Mutual Aid Agreement; and in situations where boundary lines are in question both Sheriff Department's respond until a determination is made of who is best to provide services.

California Highway Patrol. The California Highway Patrol provides traffic enforcement services throughout the unincorporated Orange County area, including along Ortega Highway, Long Canyon Road, and other roadways in the project vicinity (OCSD, 2017). The California Highway Patrol does not have any formal mutual aid agreements; however, provides patrols on the roadways in the project vicinity. Hence, there are three law enforcement agencies that provide service to the project region.

Schools

The project site is within the boundaries of the Capistrano Unified School District (Capo USD). The District currently has 34 elementary schools, 10 middle schools, six high schools, five charter schools, and seven alternative schools/programs. The District enrolls a total of approximately 54,000 students from its attendance area that encompasses over 195 square miles (Capo USD, 2015). The Capo USD closest schools that would serve the project site include: Ambuehl Elementary School, which is 12.7 miles from the project site; the Marco Forster Middle School, which is 14.9 miles from the project site; and the San Juan Hills high School is 11.9 miles from the project site. As shown, in Table 3.13-2, the enrollment has increased slightly in the last five years.

TABLE 3.13-2
SCHOOL ENROLLMENT BETWEEN 2003-2004 AND 2012-2013

School Year	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	Design Capacity	Remaining Capacity in 2015-2016
Ambuehl Elementary	444	434	415	403	416	650	234
Marco Foster Middle	1,380	1,363	1,352	1,360	1,378	1,875	497
San Juan Hills HS	1,929	2,021	2,236	2,391	2,392	2,500	108
Capo USD	53,170	53,785	53,833	54,036	53,878	n/a	n/a

SOURCE: Education Data Partnership, California Department of Education, 2016.

Hospital Service

The closest hospital facility in Riverside County is the Inland Valley Medical Center, which is located approximately 18 miles away in Wildomar. The Inland Valley Medical Center is a progressive acute care facility and medical center that is Southwest Riverside County's only trauma center. The facility has 122 beds, is a Riverside County-designated Paramedic Base Station, and averages 2,500 emergency department visits per month (https://www.inlandvalleymedcenter.com/about).

The Mission Hospital Regional Medical Center in Mission Viejo is the closest Orange County Hospital to the project site; located approximately 25 miles west of the project site. The facility is

a 523-bed full-service acute care full-service hospital that includes an emergency room trauma center (http://www.mission4health.com/About-Us.aspx).

Libraries

The Orange County Public Library provides library Services to unincorporated areas of Orange County plus the Cities of Aliso Viejo, Brea, Costa Mesa, Cypress, Dana Point, Fountain Valley, Garden Grove, Irvine, Laguna Beach, Laguna Hills, Laguna Niguel, Laguna Woods, Lake Forest, La Habra, La Palma, Los Alamitos, Rancho Santa Margarita, San Clemente, San Juan Capistrano, Seal Beach, Stanton, Tustin, Villa Park, and Westminster.

As described in the Public Services and Facilities Element of the Orange County General Plan, the County requires 0.2 square feet of library space per capita and 1.5 volumes of library materials per capita (Orange County, 2005). However, library service needs are changing with the advent of increasing resources being available online and the availability of high speed internet services.

The nearest library to the project site is the Rancho Santa Margarita Branch Library, located at 30902 La Promesa in Rancho Santa Margarita approximately 9 miles west of the project site. Currently, this library includes 85,000 books, 2,000 audiobooks, 1,200 DVDs, receives 135 periodicals, and is operated by 9 full-time employees and 11 part-time employees (Gasset, 2013).

The Mission Viejo Library, located at 100 Civic Center in Mission Viejo approximately 14 miles southwest of the project site. Currently, this branch includes 189,667 books, approximately 50 periodicals, and operates with 20 full-time employees, and 26 part-time employees (Tanton, 2013).

In addition, the Riverside County Library provides library services in the project vicinity. There are currently two Riverside County Libraries in the City of Lake Elsinore. The Vick Knight Community Library is located at 32593 Riverside Drive, which is approximately 7.6 miles from the project site. The ten thousand square foot facility has one conference room and fourteen public computers with internet access. The Altha Merrifield Memorial Library is located at 600 West Graham Avenue, which is approximately 11 miles from the project site.

Regulatory Setting

California Fire Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which include regulations concerning building standards (as also set forth in Title 24 of the California Code of Regulations, the California Building Code), fire protection and notification systems, fire protection devices (such as extinguishers and smoke alarms), high-rise building and childcare facility standards, and fire suppression training.

The California Fire Code Chapter 33 related to fire safety during construction prescribes safeguards to provide reasonable safety to life and property from fire during such construction activities. Specific safeguards related to oil-fired heaters, gas heaters, refueling, smoking, waste disposal, welding, electrical, flammable and combustible odors, water supply for fire protection,

fire extinguishers, etc. Implementation of these safeguards is designed to reduce the potential of fire related hazards during construction and demolition activities.

School Facility Development Fees - Assembly Bill 2926

In September 1986, the State Legislature passed AB 2926 (Chapter 887, Statues of 1986). This bill granted school districts in California the power to levy fees on residential, commercial, and industrial development for the purpose of financing construction of school facilities. State law prohibits a city or county from issuing a building permit unless the local school district has certified that the application is in compliance with its fee program. School districts are also allowed to increase the level of fees every two years, based on the change in the Class B construction cost index, as determined by the State Allocation Board.

Orange County General Plan

The Orange County General Plan is a blueprint for growth and development. The General Plan contains elements that describe objectives, policies, and goals for all of Orange County. The following elements listed below contain goals and policies that are most applicable to public services.

Land Use Element

Policy 2: To phase development consistent with the adequacy of public services and facilities within the capacity defined by the General Plan.

Public Services and Facilities Element

Orange County Fire Authority

Goal 1: Provide a safe living environment ensuring adequate fire protection facilities and resources to prevent and minimize the loss of life and property from structural and wildland fire damages.

Goal 2: To provide an adequate level of paramedic service for emergency medical aid in order to minimize trauma of injury or illness to patients.

Orange County Sheriff

Goal 1: Assure that adequate Sheriff patrol service is provided to ensure a safe living and working environment.

Objective 1.1: To maintain adequate levels of Sheriff patrol services through coordinated land use and facility planning efforts.

Schools

Goal 1: Encourage the funding and development of adequate school facilities to meet Orange County's existing and future demand.

Policy 1: To coordinate land use proposal reviews with appropriate school districts to assure that facility needs shall be adequately addressed, including the notification and participation of school district planners in initial County studies of all major developments.

Policy 3: To continue to require compliance with AB 2926.

Orange County Public Library

Goal 1: Assure that an adequate level of library service is provided within the service area of the Orange County Public Library.

3.13.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to public services, a project could have a significant effect on the environment if it would:

- 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:
  - Fire protection;
  - Police protection;
  - Schools;
  - Parks; or
  - Other public facilities.

As described in Chapter 1.0, *Introduction*, Notice of Preparations and Initial Studies were prepared and circulated for public review in both 2013 and 2014; the following comments related to public services were received:

- Requests from Orange County Fire Authority for information, consultation and involvement.
- Identification of the role of Riverside County Fire Department.
- Identification of fire hazards and response times to the project site.

3.13.3 Methodology

The significant determination for public services is based on public services most likely to be affected by construction and implementation of the proposed project. This analysis included corresponding with the various public services agencies with jurisdiction over the project area to request current information about service ratios, response times, performance objectives, numbers of apparatus devoted to the project's vicinity, and reviewing web-based information about these agencies. In addition, the methodology analyzed applicable General Plan Guidelines, which looked at the requirements for the service providers' and then reviewing the applicable policies in relation to the project.

Impacts on public services are considered significant if an increase in population or development levels would result in inadequate staffing levels, response times, and/or increased demand for

services that would require the construction of new or expansion of existing facilities that might have an adverse physical effect on the environment.

Orange County Standard Conditions of Approval

The following are conditions that must be met to attain project approval from Orange County. The purpose of the Standard Conditions of Approval (SCA) is to ensure the health, safety, and well-being of the citizens of Orange County.

OC SCA FF01a: Prior to the recordation of any subdivision map, the applicant shall enter into an agreement with the County of Orange to pay development fees accompanied by Security for equipment necessary to the functioning of such Library facility as provided in Sections 7-9-700 through 7-9-713 of the Codified Ordinances of the County of Orange and Board Resolution 87-1684. Said agreement shall be accompanied by financial security. This condition may be satisfied by entering into an implementation agreement with the County pursuant to an applicable development agreement, in a manner meeting the approval of the Manager of Environmental & Project Planning.

OC SCA FF02a: Prior to the recordation of any subdivision map, the applicant shall enter into an agreement with the County of Orange to pay development fees for Fire Station Standard Conditions of Approval Manual - April 2001 Edition, Page 18 of 63, as provided in Sections 7-9-700 through 7-9-713 of the Codified Ordinances of the County of Orange and Board Resolution 87-1684. Said agreement shall be accompanied by financial security. This condition may be satisfied by entering into an implementation agreement with the County pursuant to an applicable development agreement, in a manner meeting the approval of the Manager of Environmental & Project Planning.

OC SCA FF03a: Prior to the recordation of any subdivision map, the applicant shall enter into a secured agreement with the County of Orange to pay development fees for sheriff substation facilities when an applicable fee program is adopted by the Board of Supervisors, as provided in Sections 7-9-700 through 7-9-713 of the Codified Ordinances of the County of Orange. This condition may be satisfied by entering into an implementation agreement with the County pursuant to an applicable development agreement, in a manner meeting the approval of the Manager of Environmental & Project Planning.

3.13.4 Project Impacts

Impact 3.13-1: Would implementation of the proposed project result in adverse physical impacts associated with the provision of new or physically altered fire, police, school, or other public service facilities?

Fire Protection and Emergency Services

Less than Significant Impact. As described above, the OCFA provides structural and emergency medical services, and all fire prevention services to all developments within unincorporated Orange County, including the project site. The closest existing OCFA fire station to the project site is Fire Station 56, which is approximately 15 miles (a minimum of 25 minutes) from the

project site and Fire Station No. 7 approximately 18 miles (a minimum of 25 minutes) from the project site (OCFA, 2016.

However, the El Cariso Fire Station, which is operated by the Riverside County Fire Department is approximately 1.5 miles from the project site, and three other Riverside County Fire Stations are within 10 miles of the project site; including: Fire Station 74 that is 7 miles (a minimum of 13 minutes) from the project site, Fire Station 85 that is 9.2 miles (a minimum of 14 minutes) from the project site; and Fire Station 11 that is 9.3 miles (a minimum of 14 minutes) from the project site.

To best provide services to the geographical area in which the project lies, the OCFA and the Riverside County Fire Department have an Automatic Aid Agreement that includes the project area, in which the two fire agencies agree to respond to emergency alarms, including medical aid, structural fire, and other services. The Automatic Aid Agreement states that emergency response is based on the "nearest unit auto-aid" concept, in which the closest unit to an emergency call for services would respond. Thus, fire protection and emergency services in the project area would be provided by the both the Riverside County Fire Department and OCFA.

Implementation of the proposed project would result in development of 72 new residences and a population of approximately 230[1] new residents within the project area, which would require fire and/or emergency services. The increase in structures and population from the project is not substantial in comparison to the area that OCFA serves; however, due to the distance from the project site to the existing OCFA fire stations, the provision of services to the project site could pose a demand for fire services that could affect other OCFA services in the region (Hernandez, 2014).

However, per the Automatic Aid Agreement described above, both the OCFA and Riverside County Fire Department would respond to calls for service in the project area, and the closest Riverside County Fire Station is approximately 1.5 miles from the project site, which would generally be the first responder to calls for service from the project site. Although the needs for fire services would incrementally increase with development of the project, implementation of the proposed project would not require new or physically altered fire department facilities, construction of which could result in adverse physical impacts on the environment; therefore, impacts would be less than significant.

As described in Section 3.8, *Hazards and Hazardous Materials*, of this EIR, the site's proximity to extensive open space, varying topography, vegetation, and climatic conditions make it subject to wildland fires. In response to this condition, the project includes specific fire safety project design features including a Fuel Modification Plan in accordance with OFCA's Guideline C-05, *Vegetation Management Technical Design for New Construction Fuel Modification Plans and Maintenance Program* (Project Design Feature PDF-10), a conceptual landscape plan that meets OCFA guidelines (PDF-4), and a Fire Master Plan (Project Design Feature PDF-11). In addition, the project is designed to be consistent with OCFA and California Fire Code access and circulation requirements, which would be ensured and implemented through a Secure Fire

[1] Based on 72 (proposed residential units) * 3.2 (U.S. Census average number of persons per household for unincorporated Orange County).

Protection Agreement with OCFA that requires the specifications to roadways, access, and fire hydrant spacing to be implemented, which is included as Mitigation Measure MM 3.13-1. Implementation of Mitigation Measure MM 3.13-1would reduce potential impact related to fire hazards and fire and emergency service provision to the project area.

In addition, the proposed onsite fire suppression infrastructure includes two water storage tanks (one 615,000-gallon tank on the Phase 1 (south parcel) and one 525,000-gallon tank on the Phase 2 (north parcel)) (PDF-19), which have been sized pursuant to OCFA specification to ensure adequate fire protection. In addition, the water storage tanks would be directly connected to onsite fire hydrants that would accommodate fire department apparatus to provide fire protections needs within each phase. The proposed project would also install automatic fire sprinklers in every residence (Project Design Feature PDF-11).

Due to the rural location of the project area and the natural environmental conditions related to the potential for wildland fire hazards, Mitigation Measure MM 3.13-2 has been included to require disclosure of the location of fire and emergency services to residents of the proposed project. Furthermore, in accordance with Orange County Standard Conditions of Approval, prior to the recordation of any subdivision map, the project applicant is required to pay development fees to the Orange County Fire Authority (OC SCA FF02a), which would assist in provision of services to the project area.

Overall, implementation of the proposed project would not require new or physically altered fire department facilities. With implementation of the project design features, compliance with California Fire Code, OCFA, and EVMWD regulations, and implementation of Mitigation Measures MM 3.13-1 and 3.13-2, would reduce potential impacts related to fire protection service to a less than significant level.

Mitigation Measures

MM 3.13-1 Prior to the issuance of any grading permits, the applicant shall obtain the Orange County Fire Authority design approval of all fire protection access roads, fire hydrants, and fire prevention design measures that shall include the following:

- Turning radius and access in and around the project site and structures shall be designed to accommodate large fire vehicles and their weight.
- All roadways that have medians that do not exceed 1000-feet in width shall have a turnaround. Roadways with medians greater than 1000-feet in width shall provide emergency turnaround access for heavy fire equipment.
- If a dead-end street exceeds 150 feet or when otherwise required, a clearly marked fire apparatus access turnaround shall be provided and approved by the Orange County Fire Authority.
- All traffic signals on public access ways shall include the installation of optical preemption devices.
- Project plans shall include plan and section views and indicate the grade and width of the access road flow-line to flow-line.

- Applicable CC&Rs shall contain provisions prohibiting obstructions such as speed bumps/humps, control gates or other modifications unless approval from the Orange County Fire Authority is granted.
- A note shall be placed on the fire protection access easement plan indicating that all street/road signs shall be designed and maintained to be illuminated in a manner meeting the Orange County Fire Authority requirements.
- Fire hydrant spacing shall be 600 feet between fire hydrants, or as approved by the Orange County Fire Authority.
- All electrically operated gates shall install emergency opening devices as approved by the Orange County Fire Authority.

MM 3.13-2 The HOA managing the proposed project shall ensure disclosure of potential wildfire hazards and the location of fire and emergency services to all residents. This information shall be provided in information provided to new homeowners and within regular communications to residents from the HOA.

Police Protection

Less than Significant Impact. Because of the rural location of the project, the Orange County Sheriff Department's response to any emergency at the location could be extended due the distance from regular patrol areas (OCSD, 2017). The project area is approximately 20 miles east from the closest regular OCSD patrol area (Rancho Mission Viejo) with an estimated drive time of 27 minutes (OCSD, 2017). Additionally, Ortega Highway is a narrow, winding two-lane arterial roadway leading to the project area, and a primary route for persons working in south Orange County and Riverside County, and is heavily used. At times, this roadway is closed due to fire, traffic collisions, roadway conditions, and foul weather, which would affect the OCSD's ability to respond to the project area.

However, the Riverside County Sheriff's Station located at 333 W Limited Avenue in Lake Elsinore that is 11 miles from the project site currently serves El Cariso Village, which is approximately 1,500 feet east of the project area. As described above, Riverside County and Orange County Sheriff Departments are both participants in a mutual aid agreement; and in situations where the location of the closest responder to the location of an emergency is in question, both Sheriff Department's respond. In addition, the California Highway Patrol provides traffic enforcement services throughout the unincorporated Orange County area, including the project site (OCSD, 2017). Thus, although the project site is in a rural location that is accessed by a narrow, winding two-lane arterial roadway, three different law enforcement agencies provide services to the project region and would provide various resources.

As described above, OCSD has a long-term need for 10 additional Deputy Sheriffs to serve the unincorporated south Orange County area (OCSD, 2017), in which the project is located. In addition, as shown in Section 3.12, *Population and Housing*, in Table 3.12-3, by the year 2035, SCAG estimates the population of unincorporated Orange County to be 177,900, an increase of 52,480 residents from the 2016 population estimate of 125,420 residents. Based on this number,

the development of the proposed residential uses would constitute approximately 0.44 percent of the anticipated growth in unincorporated area Orange County.

Given the overall anticipated growth in the region that is served by OCSD and the current response times within the south unincorporated Orange County areas, OCSD anticipates the need to augment law enforcement staffing in the unincorporated south Orange County patrol area. However, new or physically altered police facilities would not be required as a result of the proposed project. The project applicant is required to pay mitigation fees as required by Code Sections 7-9-700 through 7-9-713 (OC SCA FF03a) to extend services to developing areas and reduce impacts related to police services. The services needed by the project would not require development or expansion of law enforcement facilities. Thus, adverse physical impacts associated with the provision of new or physically altered police facilities would not occur, and impacts related to police services would be less than significant.

Schools

Less than Significant Impact. As described previously, the project area is within the boundaries of Capo USD, and student enrollment has increased slightly in the last five years (shown in Table 3.13-2). Because the project would develop 72 single-family residences, it is anticipated that school services would be needed. **Table 3.13-3** shows the anticipated number of students based on the most recent Capo USD student generation rates.

TABLE 3.13-3
ANTICIPATED STUDENTS BASED ON CAPO USD GENERATION RATES

Grade	Generation Rate*	Students
K-5	0.37	27
6-8	0.1074	8
9-12	0.1039	7
Total	**0.5895**	**42**

SOURCE: Capo USD Facility Needs Analysis, May 2010.

As shown in Table 3.13-3, it is estimated that the project would generate approximately 42 students. As shown in Table 3.13-2, the schools that would serve the project site have capacity to serve the students that would be generated from the project. Ambuehl Elementary School has an existing remaining capacity of 234 students; hence, the school has capacity for the 27 elementary school students that would reside at the project site. Marco Foster Middle School has an existing remaining capacity of 497 students; and therefore, would be able to serve the eight middle school students that would be generated from the project. In addition, the San Juan Hills High School has a remaining capacity of 108 students; and therefore, would be able to accommodate the seven high school students that would be generated by the project. Therefore, the proposed project is not anticipated to result in the need for new or expanded school facilities.

In addition, the project applicant is required to pay fees for the provision of school services pursuant to state law AB 2926. Currently, the fee for new residential development for Capo USD is $3.36 per square foot of new residential development. This fee would contribute to a fund that

would pay for new or expanded buildings, faculty, or equipment. Under state law, payment of school impact fees constitutes mitigation for school facility impacts of projects and such payments are deemed to provide full and complete school facilities mitigation. As a result, the proposed project would have a less than significant impact on school facilities.

Hospital Service

Due to the increase in population that would result implementation of the project, an incremental increase demand for hospital services could occur. However, due to the limited (230 residents) population increase that would result from the project, this impact would not affect the ability of the regional hospitals to meet medical service needs generated by the proposed project. The Inland Valley Medical Center and the Mission Hospital would continue to be able to meet the needs of the region, and new or physically altered hospital facilities would not be required as a result of the proposed project. Thus, impacts would be less than significant.

Libraries

Less than Significant Impact. The project would incrementally increase the demand for library services. However, due to the small population increase of the proposed project (230 people), the impact on library services is anticipated to be minimal and would not affect the County's ability to provide library services, as shown in **Table 3.13-4**, below.

TABLE 3.13-4
PROJECT DEMAND FOR LIBRARY FACILITIES AND BOOK SUPPLIES

Facilities/Books	Standard of Service (per resident)	Project Demand (230 residents)	Total for Unincorporated Orange County Residents (121,160 residents)
Library Area (Square Feet)	0.2 square feet	46 square feet	24,232 square feet
Book Volumes	1.5 book volumes	345 book volumes	181,740 book volumes

SOURCE: Public Services and Facilities Element of the Orange County General Plan, 2005.

As described above, library service needs are changing with increasing resources being available online and the availability of high speed internet services. Therefore, new residential uses on the project site does not immediately equate to an increased need for library resources/services or square footage of library space. A majority of the residential units would be equipped with internet access, which provides access to many of the same resources provided by the library and would limit the increased need for library services and resources.

The Rancho Santa Margarita Library, Mission Viejo Library, and Lake Elsinore Libraries have adequate facilities and book supplies to serve the existing service population, and can accommodate the additional needs from the proposed project. Furthermore, Orange County Code Sections 7-9-700 through 7-9-713, requires the applicant to pay development fees toward the provision of library services and facilities (OC SCA FF01a). Overall, implementation of the proposed project would not result in the need for new or physically altered library facilities, the

construction of which could cause significant environmental impacts; and impacts would be less than significant.

3.13.5 Cumulative Impacts

Fire Protection and Emergency Services

The geographic context for cumulative fire protection and emergency services is the County of Orange and nearby areas within Riverside County that would be served by the facilities serving the project area. As described above, the project would include numerous project design features and a mitigation measure to reduce impacts related to fire service facilities to a less than significant level. Other residential development projects (see **Table 3-1** in Chapter 3.0) in the project vicinity include: the Lakeshore Point and Villages at Lakeshore projects within the City of Lake Elsinore; the Ranch Plan Planning Area 2 in unincorporated Orange County, and Robinson Ridge in the City of Rancho Santa Margarita. The projects within the City of Lake Elsinore are the closest related projects, approximately 2.4 miles from the proposed project. Like the proposed project, the development projects that are located in high fire hazard areas and would be required to implement similar fire master plans and fuel modification plans per OCFA that would reduce fire hazards.

As described in the General Plan, future residential, commercial, and industrial growth projected to occur in south and southeast Orange County and would require expansion of OCFA's system of fire stations (County of Orange, 2005). Project and cumulative project demands for services are offset by impact fees and by project specific fire protection improvements that are required on a project-specific basis (Mitigation Measure MM 3.13-1). As the project includes Project Design Features PDF-4, PDF-10, PDF-11, and PDF-19 (described above) that involve fire safe planning, which would reduce impacts to a less than significant level, and related projects would also be subject to impact fees and fire hazard design planning, cumulative impacts associated with fire service facilities would be less than significant.

Police Protection

The geographic context for cumulative fire protection and emergency services is the County of Orange and nearby areas within Riverside County that would be served by the facilities serving the project area. As described above, the project applicant is required to pay mitigation fees as required by Code Sections 7-9-700 through 7-9-713 (OC SCA FF03a) to extend services to developing areas and reduce impacts related to police services, and project impacts related to law enforcement services would be less than significant. Several residential and commercial projects are proposed within the nearby geographical area including: the Lakeshore Point and Villages at Lakeshore projects within the City of Lake Elsinore; the Ranch Plan Planning Area 2 in unincorporated Orange County, and Robinson Ridge in the City of Rancho Santa Margarita. The projects within the City of Lake Elsinore are the closest related projects, approximately 2.4 miles from the proposed project, which would have a cumulative impact on sheriff services. However, the increased need for police protection services would be offset by development fees in compliance with Orange County Code Sections 7-9-700 through 7-9-713. Because the project

would reduce impacts to a less than significant level, and because related projects would be subject to impact fees to offset services, cumulative impacts associated with police facilities would be less than significant.

Schools

The geographic context for cumulative impacts to schools is the Capo USD service boundaries. As described above the schools that would serve the proposed project have excess capacity. As described above the project is anticipated to generate a small number of students that would be accommodated within existing school facilities. Like the proposed project, each cumulative project would be required to pay school facility fees pursuant to state law AB 2926 that would mitigate impacts to schools. Because the project would result in less than significant impacts related to schools and because school fees are required pursuant to AB 2926, the proposed project's contribution to a cumulative impact to school facilities is less than significant.

Hospitals

The geographic scope for cumulative library services is the County of Orange and nearby areas within Riverside County that would be served by the facilities serving the project area. The proposed project, in combination with other identified development in the service area including: the Lakeshore Point and Villages at Lakeshore projects within the City of Lake Elsinore; the Ranch Plan Planning Area 2 in unincorporated Orange County, and Robinson Ridge in the City of Rancho Santa Margarita, could increase the need for hospital services. However, the majority of these related projects are located closer to Mission Hospital, and the proposed project is located closer to the Inland Valley Medical Center; thus, most of the emergency medical needs from these related projects would be served by Mission Hospital. The hospital closest to the project area is currently operating with adequate capacity to serve the proposed project in combination with related development projects in the vicinity. Due to the low number of residences provided by the project and the level of existing hospital and medical services within the region, the proposed project would result in a less than significant contribution to cumulative impacts related to hospital facilities.

Libraries

The geographic scope for cumulative library services is the County of Orange and nearby areas within Riverside County that would be served by the facilities serving the project area. The proposed project, in combination with other identified development in the service area including: the Lakeshore Point and Villages at Lakeshore projects within the City of Lake Elsinore; the Ranch Plan Planning Area 2 in unincorporated Orange County, and Robinson Ridge in the City of Rancho Santa Margarita, could increase the need for library services. However, project impacts would be less than significant due to the limited number of residents generated by the project and the resources available through the internet, which most of the new residences would have. In addition, impacts related to cumulative projects would be offset by required development fees. Therefore, the proposed project would result in a less than significant cumulative impact related to library facilities.

3.14 Recreation

This section provides the environmental setting and impact analysis for parks, open space, and recreational resources related to the proposed project. The purpose of this section is to assess impacts of the proposed project on recreational services.

3.14.1 Environmental Setting

Existing Conditions

Cleveland National Forest

The project area is adjacent to the Cleveland National Forest, which includes approximately 460,000 acres and provides numerous recreation facilities including: 15 family campgrounds, seven group campgrounds, over 650 campsites, 356 miles of trails, 10 trailheads, seven picnic areas, 23 miles of motorcycle trails, and seven miles of four-wheel drive off-road routes (USDA, 2013). The forest area near the site is designated as "Elsinore Place", which includes 46,729 acres that contains: campgrounds, picnic areas, horseback riding, hiking, mountain biking, and hang-gliding. The following facilities are in the vicinity of the project site:

- Blue Jay Campground, which is approximately 2,000 feet northwest of Phase 1 (south parcel) on Long Canyon Road and includes 51 campsites;
- Falcon Group Campsite, which is approximately 0.5-mile northwest the project site on Long Canyon Road, past the Blue Jay Campground and includes 3 large campsites for groups of 40 persons;
- Upper San Juan Campground that is approximately 2 miles west of the project site adjacent to Ortega Highway, and has 18 camp sites;
- El Cariso Campground that is approximately 2 miles east of the site adjacent to Ortega Highway, and has 24 camp sites; and
- The following hiking trails: San Juan Trail (2.4 miles northwest of the project site on Long Canyon Road), Main Divide Trail (2.9 miles northwest of the project site on Long Canyon Road), Los Pinos Trail (4.6 miles northwest of the project site on Long Canyon Road), and Chiquito Trail (2.9 miles south of the site on Ortega Highway).

County of Orange

The project area is within the County of Orange, which includes nearly 60,000 acres of regional parks, wilderness parks, nature preserves, historical sites, and beaches. This includes 63 developed parks within the unincorporated County. These facilities are identified in the County's General Plan in the Master Plan of Regional Recreation Facilities, which describes the countywide regional network of facilities (Orange County, 2005).

The closest County of Orange park facility to the project site is Caspers Wilderness Park, which is an 8,000-acre protected wilderness preserve located approximately 14.2 miles west of the project site. Caspers Wilderness Park amenities include: an amphitheater, barbeques, fire rings,

bike trails, equestrian trails, hiking trails, camp sites, picnic areas, playground, tot lot, restrooms, and showers.

The County's General Plan also includes a Master Plan of Regional Riding and Hiking Trails that identifies 348 miles of existing and proposed trails. Many trails within the Cleveland National Forest connect to the regional trail system within both Orange and Riverside Counties. Regional trails support equestrian, pedestrian (walking, hiking, running), and mountain biking use. As listed above, the project site is in the vicinity of the San Juan Trail, Los Pinos Trail, Main Divide Trail, and Chiquito Trail, some of which continue into Cleveland National Forest (Orange County, 2005).

County of Riverside/City of Lake Elsinore

There are no County of Riverside parks in the vicinity of the project site. The nearest active parks to the proposed project in the County of Riverside are within the City of Lake Elsinore, and include:

- Machado Park is located at 15150 Joy Street, 9 miles east of the project site. Machado Park is 5 acres and includes: tennis courts, play equipment, open turf area, shaded shelters, barbecues, restrooms, picnic facilities and parking.
- Lincoln Street Park is located at 14986 Lincoln Avenue, 9 miles east of the project site. Lincoln Street Park is 2.2 acres and includes: tot lot, shade structure, benches, and picnic tables.
- McVicker Canyon Park is located at 29355 Grand Avenue, approximately 9.6 miles east of the project site. McVicker Canyon Park is 26 acres and includes: a skate park, two large softball/baseball fields, concession area, open play areas, a tot lot, dog play area, restrooms and shade structures.
- Summerlake Park is located at 900 W. Broadway, 9.7 miles east of the project site. Summerlake Park is 11.5 acres and includes: 5 soccer fields, 2 basketball courts, tot lot, restrooms, picnic areas, barbeques and parking.

Project Site

There are no structured recreational facilities located on the project site. The project site is private land that consists of open space, which is likely used for recreation purposes. The nearest designated trail is the San Juan Trail, that is within the Cleveland National Forest, located approximately 2.4 miles east of the project site.

Regulatory Setting

Quimby Act

The California Planning, Zoning, and Development Laws, Section 66477 (Quimby Act) allow the legislative body of a City or County, by ordinance, to require the dedication of land, the payment of in-lieu fees, or a combination of both, for park and recreational purposes as a condition to approval for a final tract map or parcel map. The Quimby Act requires that developers set aside land, donate conservation easements, or pay fees for park improvements. The goal of the Quimby Act is to require developers to help mitigate the impacts of property improvements. The County

of Orange adopted the Interim Plan of Local Parks and the Local Park Code in response to the Quimby Act. This code allows for the payment of in-lieu fees or a combined provision of parkland and development fees. In addition, the regulations related to dedication of parkland and payment of in-lieu fees is provided in the County's Codified Ordinances, as described below.

County of Orange Codified Ordinances

Section 7-9-522 details the amount of parkland required per residential unit. The section states that developments that provide up to 6.5 dwelling units per acre, which includes the proposed project, are required to dedicate 0.008 parkland acres per dwelling unit. Based on the development of 72 single-family residential units, the project would be required to provide 0.58-acre of parkland.

The County's Ordinances also provide for the payment of fees, in lieu of the provision of parkland. Section 7-9-523 details the requirements for payment of parkland fees, which is based on the acreage requirements of Section 7-9-522 (above) and the land value of the area to be developed.

County of Orange General Plan

Recreation Element

The following goals and policies from the General Plan Recreation Element are relevant to the proposed project;

> **Goal 1:** Provide adequate local park sites to meet the recreation needs of existing and future residents and preserve natural resources within unincorporated Orange County.
>
> **Policy 2.32:** To acquire park lands by requiring residential developers to provide a minimum of 2.5 net acres of usable local parkland (i.e., parkland that is relatively level, served by utilities, for multipurpose playfields, court sports, etc.) for each prospective 1,000 residents. In no case shall the credit for parkland and improvements exceed the total requirement under the Local Park Code. No credit banking shall be permitted when a developer provides the full requirement in acres and also provides improvements.
>
> **Policy 2.4:** To acquire local park lands in unincorporated areas to provide active recreation facilities to meet the needs of present and future.

3.14.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to recreation, the project could have a significant effect on recreation if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

3.14.3 Methodology

This analysis is based on a review of public information about Cleveland National Forest, Orange County, Riverside County, and City of Lake Elsinore parks and recreational facilities. The analysis considers the increase in use of parks and recreation facilities that would result from the increased development intensity from the proposed project, along with the ability of existing park and recreation facilities to accommodate the increased use. The analysis considers whether an increase in use would result in the substantial physical deterioration of existing recreational facilities, such as accelerated wear on sports facilities and fields, or in the need for new or expanded facilities.

3.14.4 Project Impacts

Impact 3.14-1: 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?

Less than Significant Impact. As described above, the project site is located adjacent to parcels that are within the Elsinore Place portion of the Cleveland National forest, which contains 46,729 acres of land that provides recreational facilities, such as: campgrounds, picnic areas, horseback riding, hiking, mountain biking, and hang-gliding. Also as listed above, there are various existing recreational facilities in the vicinity of the project site that include campgrounds and trails. In addition, the open space areas on the project site contain many trails.

The proposed project would develop 72 new single-family residential units in a rural part of Orange County, which would increase the population of Orange County by an estimated 230 residents[1]. Although, the project would also provide 414.6 acres of open space land that would be offered for dedication to the U.S. Forest Service (Project Design Feature PDF-1), the intent of the area would be for preserved open space and additional recreation amenities or facilities would not be provided within the open space area.

However, the California Planning, Zoning, and Development Laws (Section 66477, Quimby Act) allows jurisdictions to establish requirements for the dedication of local park acreage, in lieu fees, or a combination of both for residential developments; and the County's Codified Ordinances implement parkland requirements for development projects. Based on Section 7-9-522 of the County's Codified Ordinances the proposed project would be required to dedicate 0.008 acres of parkland per dwelling unit. As the project would develop 72 single-family residential units, 0.58-acre of parkland would be required. This is also consistent with the General Plan Recreation Policy 2.32, which states that a developer is required to dedicate 2.5 acres of parkland, or the proportional share thereof, per 1,000 residents (Orange County, 2005). Because the proposed project would add 230 new residents to the project site 0.58-acre of parkland would be required.

Also, as described above, the County's Ordinance provides for the payment of fees, in lieu of the provision of parkland. Codified Ordinance Section 7-9-523 details that the requirements for

[1] Based on an average household size of 3.2 persons/household for unincorporated areas of Orange County. It should be noted that the average household size for all of Orange County is 3.0 persons/household (U.S. Census Bureau, 2010).

payment of parkland fees is based on the acreage requirements of Section 7-9-522 and the land value of the area to be developed. Although the project includes the provision of 414.6 acres of open space that would be offered for dedication to the U.S. Forest Service (Project Design Feature PDF-1), the intent of the area would be for preserved open space and additional recreation amenities or facilities would not be provided within the open space area. Thus, the project would pay the parkland in lieu fees required by Section 7-9-253.

Overall, due to the extensive acreage of existing recreational resources in the project vicinity that far exceed the County's requirement of 2.5 acres of parkland per 1,000 residents, the addition of 230 residents to the area would not result in increased use of recreation facilities, such that substantial physical deterioration of the facilities would occur or be accelerated. In addition, the payment of parkland fees per County Ordinance would be required to receive permits for project implementation, which would provide funding for recreation facilities. Therefore, impacts related to recreation would be less than significant.

Impact 3.14-2: Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed project does not include the construction of recreational facilities. Construction of the project is limited to residential structures and associated facilities, such as roadways and landscaping.

Additionally, as described above in Impact 3.14-1, the project site is located in the vicinity of a network of existing trails and other recreation facilities that would support the recreational needs of the additional 230 residents that would be generated from the project. The proposed project would retain 414.6 acres of the project site as open space (Project Design Feature PDF-1) which currently includes trail facilities that would be used by onsite residents in addition to the local offsite recreational facilities.

Although the existing recreational resources in the project vicinity would support the recreational needs of the project residents, the payment of in-lieu fees pursuant to the Quimby Act and County Codified Ordinance Sections 7-9-523 and 7-9-523 would be required for the project to be implemented. Overall, the proposed project would not require the construction or expansion of other recreational facilities that might have an adverse physical effect on the environment. As a result, impacts related to an adverse physical effect on the environment from construction of recreational facilities would not occur.

3.14.5 Cumulative Impacts

The geographic area in which cumulative impacts to recreation could occur is the nearby locations that the residents from the project would recreate a majority of the time, which are the portions of Orange County, Riverside County and Lake Elsinore that are detailed in the Environmental Setting, Section 3.14-1. As described previously, the proposed project would

preserve 414.6 acres of open space that includes existing trails and is nearby recreation facilities within the vast Cleveland National Forest. Because the project would provide the large preserved open space areas, (which would far exceed the acreage of project development) that is adjacent to recreational forest land and would pay parkland in-lieu fees, the proposed project would not contribute to a cumulatively considerable impact related to recreation. Cumulative impacts related to recreation would be less than significant.

3.15 Transportation and Traffic

The purpose of this section is to address potential traffic and circulation impacts associated with implementation of the proposed project. The traffic and circulation analysis includes a description of existing traffic conditions (e.g., level of congestion at intersections in the project site vicinity), an evaluation of potential impacts associated with implementation of the proposed project and cumulative impacts. A discussion of applicable state, local and regional plans and/or programs also is included. Information in this section is based on the *Preserve at San Juan Traffic Impact Analysis* prepared by Urban Crossroads (Urban Crossroads, 2017), included as Appendix J.

3.15.1 Environmental Setting

Existing Conditions

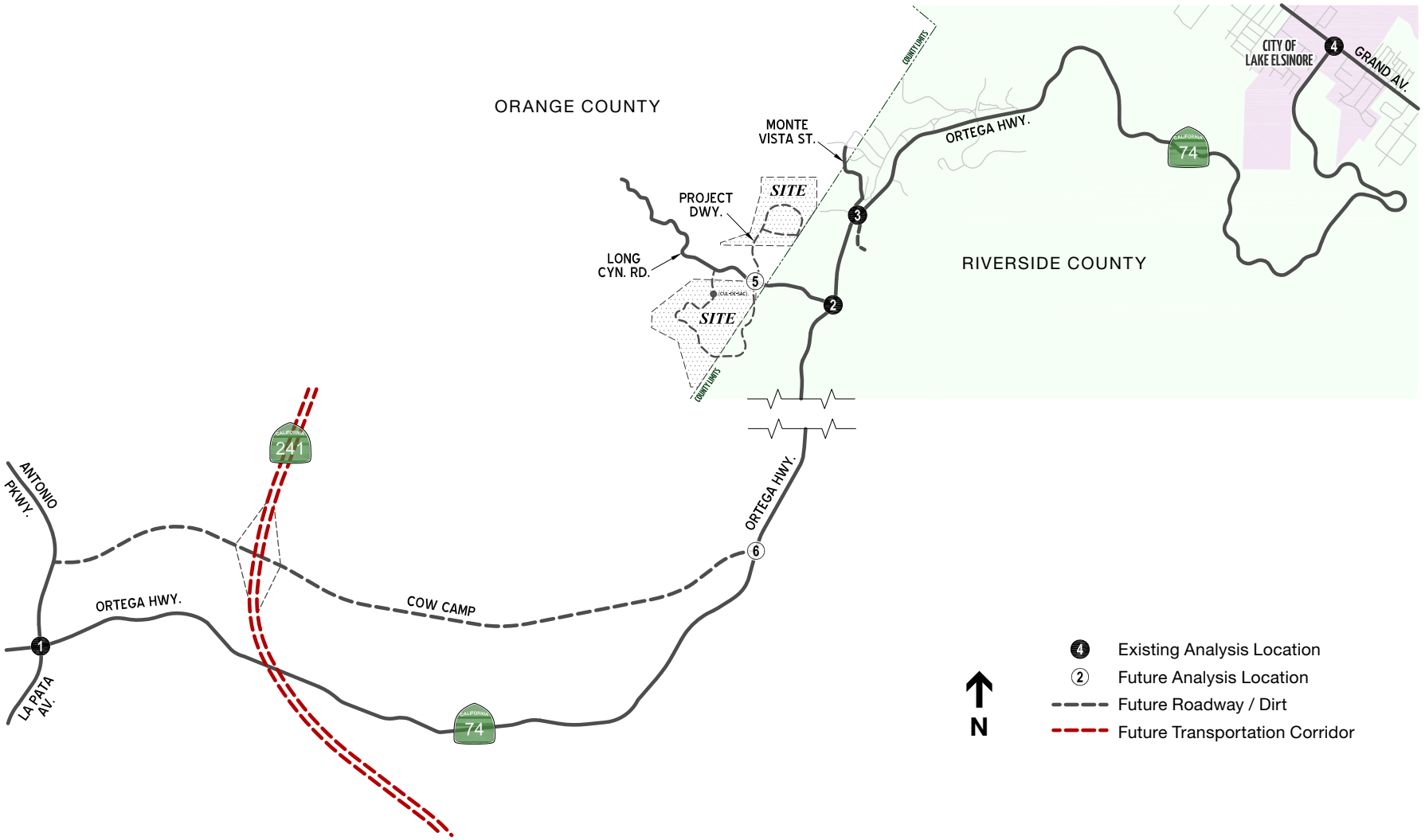
Study Area

The project site consists of two parcels located west of Ortega Highway on the north and south sides of Long Canyon Road. Ortega Highway is a two-lane highway, except between Antonio Parkway – La Pata Avenue and I-5 (in the City of San Juan Capistrano) where it is a four-lane divided highway. The current average daily traffic volume ranges from about 10,500 vehicles near the project to about 45,000 vehicles near I-5 (Caltrans, 2013). Long Canyon Road is a two-lane public road that provides access to Ortega Highway Area of the Cleveland National Forest (including Blue Jay and Falcon Group campgrounds).

Based on discussions with County staff, the study area includes seven existing and future intersections, which are shown on **Figure 3.15-1** and listed below the noted jurisdictions):

1. Ortega Highway (SR 74) at Antonio Parkway – La Pata Avenue (*Orange County*)
2. Ortega Highway (SR 74) at Long Canyon Road (*Riverside County*)
3. Ortega Highway (SR 74) at Monte Vista Street (*Riverside County*)
4. Ortega Highway (SR 74) at Grand Avenue (*City of Lake Elsinore*)
5. Long Canyon Road at South Project Driveway (*Future Intersection*) (*Orange County*)
6. Long Canyon Road at North Project Driveway (*Future Intersection*) (*Orange County*)
7. Ortega Highway (SR 74) at Cow Camp Road (*Future Intersection*) (*Orange County*)

None of the study area intersections are part of the Orange County or Riverside County Congestion Management Programs (CMP), referenced below under Regulatory Setting.



SOURCE: Urban Crossroads

The Preserve at San Juan . 120826

Figure 3.15-1
Study Area Intersections

Public Transit

Public transit service in the Orange County is provided by Orange County Transportation Authority (OCTA), and Riverside County Transit Authority (RFTA) provides transit services for Riverside County. However, there is no public transit service in the project area.

Existing Level of Service

The operation of a roadway network is commonly described using a grading system called Level of Service (LOS). The LOS grading system characterizes traffic conditions associated with varying levels of vehicle traffic, ranging from LOS A (indicating free-flow traffic conditions with little or no delay experienced by motorists) to LOS F (indicating congested conditions where traffic flows exceed design capacity and result in long queues and delays). This LOS grading system applies to both signalized and unsignalized intersections. LOS A, B, and C are considered acceptable service levels, while the influence of congestion becomes more noticeable (though still considered acceptable) at LOS D. LOS E and F are considered to be unacceptable. LOS and associated vehicle delays (and v/c ratios for signalized intersections) are shown in **Table 3.15-1**.

Study Intersections

Existing a.m. and p.m. peak-hour traffic turning movement volumes were collected in February 2017. As shown in **Table 3.15-2**, all study intersections are currently operating at acceptable levels of service during peak hours. The traffic count data and HCM and ICU calculation worksheets for existing conditions are provided in Appendix J of this EIR.

TABLE 3.15-1
DEFINITIONS FOR INTERSECTION LEVEL OF SERVICE

Unsignalized Intersections			Signalized Intersections	
Description	**Average Delay per Vehicle (Seconds)**	**Level of Service Grade**	**Critical Average Delay per Vehicle (Seconds) or V/C Ratio[a]**	**Description**
No delay for stop-controlled approaches.	≤10.0	A	≤10.0 ≤0.60	Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	>10.0 and ≤20.0 ≥0.61 and ≤0.70	Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	>20.0 and ≤35.0 ≥0.71 and ≤0.80	Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	>35.0 and ≤55.0 ≥0.81 and ≤0.90	Approaching Unstable with Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	>55.0 and ≤80.0 ≥0.91 and ≤1.00	Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers.	>50.0	F	>80.0 >1.00	Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

[a] Per the HCM methodology, average delay (in seconds per vehicle) defines LOS. Per the ICU methodology, overall volume-to-capacity (V/C) ratio is used to define LOS.

SOURCE: Transportation Research Board, *Highway Capacity Manual*, 2010.

TABLE 3.15-2
INTERSECTION EXISTING CONDITIONS

Intersection	Level of Service (V/C Ratio) [b] AM Peak	PM Peak
Ortega Highway (SR 74) at		
• Antonio Parkway (Orange County)	D (0.656)	C (0.606)
• Long Canyon Road (Riverside County)	C	D
• Monte Vista Street (Riverside County)	C	C
• Grand Avenue (City of Lake Elsinore)	B	C

SOURCE: Urban Crossroads, 2017.
[b] The volume-to-capacity (v/c) ratio (calculated using the ICU methodology) is provided in parentheses for signalized intersections in Orange County.

Regulatory Setting

Congestion Management Program Compliance

Based on the approval of Proposition 111 in 1990, regulations require the preparation, implementation, and annual updating of a Congestion Management Program (CMP) in each of California's urbanized counties. One required element of the CMP is a process to evaluate the transportation and traffic impacts of large projects on the regional transportation system. That process is undertaken by local agencies, project applicants, and traffic consultants through a transportation impact report usually conducted as part of the CEQA project review process. Authority for local land use decisions including project approvals and any required mitigation remains the responsibility of local jurisdictions.

The purpose of the state-mandated CMP is to monitor roadway congestion and assess the overall performance of the region's transportation system. Based upon this assessment, the CMP contains specific strategies and identifies proposed improvements to reduce traffic congestion and improve the performance of a multi-modal transportation system. Examples of strategies include increased emphasis on public transportation and rideshare programs, mitigating the impacts of new development and better coordinating land use and transportation planning decisions.

Ortega Highway is part of the Orange County and Riverside County CMP highway systems, but none of the intersections directly serving the project site are within the CMP system (OCTA, 2015). The criteria for which a project is subject to the regulations as set forth in the CMP are determined by the trip generation potential for the project. The Orange County CMP Highway System includes specific roadways and intersections and requires that a traffic impact analysis be conducted for any project generating 2,400 or more daily trips or 1,600 or more daily trips for projects that directly access the CMP Highway System.

The project site is adjacent to roadways that do not have direct access to the CMP Highway System; therefore, the threshold is 2,400 or more daily trips. As shown below in **Table 3.15-3,** the proposed project is forecast to generate 690 daily trips; and thus, does not require a CMP traffic evaluation per the Orange County CMP. The Riverside County CMP only requires analysis if the proposed development causes the LOS on a non-exempt CMP facility to fall to below the LOS E standard, which would not occur, as detailed below.

Senate Bill 743

Senate Bill (SB) 743 was adopted in 2013 (Steinberg, 2013) to change the mechanics of transportation impact assessments. SB 743 removed the CEQA requirement to evaluate automobile delay (LOS) and provided vehicle-miles traveled (VMT) as new traffic assessment criteria to better address the state's goals on climate change and multimodal transportation. Per SB 743, vehicle miles travelled is the most appropriate metric to evaluate a project's transportation impacts.

On January 26, 2016, a revised draft SB 743 Guidelines document was released to implement SB 743, by establishing VMT criteria for determining the significance of transportation impacts. Once the Natural Resources Agency adopts changes to the proposed CEQA Guidelines to implement VMT criteria, automobile delay, as measured by "level of service" will no longer constitute a significant environmental effect under CEQA. Because the revised CEQA Guidelines being considered by the Natural Resources Agency were not adopted at the time of the Notice of Preparations (NOPs) for this EIR, and are not likely to be adopted prior to certification of the Final EIR, and the County of Orange does not have adopted thresholds for VMT, the analysis contained in this EIR follows the CEQA Guidelines as they exist at the time of the NOPs for the proposed project.

2012-2035 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS)

The Southern California Association of Governments (SCAG) adopted (April 2012) the 2012-2035 RTP/SCS, which focuses on improving the balance between land use and current, as well as future, transportation systems. SCAG develops, maintains, and updates the RTP on a four-year cycle. The 2012 RTP/SCS contains three projects involving Ortega Highway in Orange County, i.e., reconstruct the I-5/Ortega Highway interchange, widen Ortega Highway from Rancho Viejo Road to just east of I-5, and widen Ortega Highway from the Orange County/City (San Juan Capistrano) line to east of La Pata Avenue / Antonio Parkway.

Because the proposed project would require a General Plan Amendment, SCAG considers the project to be regionally important and, therefore, requires that the EIR consider the consistency of the proposed project with SCAG's regional plans (see Impacts 3.15-1 and 3.15-2, below).

County of Orange General Plan

Transportation Element

The Orange County General Plan Transportation Element deems LOS C an acceptable LOS, but accepts LOS D at County intersections during peak hours. The goals, objectives and policies that are applicable to the proposed project are listed below.

> **Policy 1.2:** Apply conditions to land use development projects to ensure that the direct and cumulative impacts of these projects are mitigated consistent with established level of service policies.
>
> **Objective 2.1:** Plan, develop and implement a circulation system in the unincorporated areas, which is consistent with the Master Plan of Arterial Highways and circulation plans of adjacent jurisdictions.

Policy 2.4: Apply conditions to development projects to ensure compliance with OCTA's transit goals and policies.

Policy 2.5: Apply conditions to development projects to ensure implementation of the Circulation Plan as applicable.

Objective 3.2: Provide for safe and efficient movement of traffic on smartstreets, 8-lane, 6-lane, 4-lane and 2-lane arterials so as to provide access to the regional circulation network.

Policy 3.1: Maintain acceptable levels of service on arterial highways pursuant to the Growth Management Element of the General Plan.

Policy 3.2: Ensure that all intersections within the unincorporated portion of Orange County maintain a peak hour LOS D according to the County Growth Management Plan Transportation Implementation Manual.

Policy 3.3: Evaluate all proposed land use phasing plans for major development projects to ensure maintenance of acceptable LOS on arterial highway links and intersections.

Goal 5: Manage peak hour traffic congestion to achieve an acceptable LOS on existing and future circulation plan facilities in the unincorporated areas of the County.

Policy 5.1: Establish "traffic impact fees" for application to County development projects with measureable traffic impacts, as defined in the Growth Management Element of the General Plan. These fees may serve as local matching funds for Orange County Measure "M" state and federal highway funding programs.

Policy 5.2: Use uniform analytical methods, in conformance with the Growth Management Plan, Measure M, and the Congestion Management Plan (CMP) to aid in transportation planning and impact evaluation and support the development and utilization of sub-area models to address detailed transportation issues.

Policy 5.5: Require as conditions of approval that the necessary improvements to arterial highway facilities, of which the project contributes measurable traffic, be constructed and completed within a specified time period or ADT/peak hour milestone to attain a LOS D at intersections under the sole control of the County.

Policy 5.7: Require, as a condition of approval, that a development mitigation program, development agreement or developer fee program be adopted to ensure that development is paying its fair share of the costs associated with that development pursuant to Policy 5.1.

Growth Management Element

The purpose of the Growth Management Element of the Orange County General Plan is "to mandate that growth and development be based upon the County's ability to provide an adequate circulation system" as well as other support services and facilities. The goals, objectives and policies that are applicable to the proposed project are listed below.

Goal 2: Ensure that adequate transportation facilities, public facilities, equipment, and services are provided for existing and future residents.

Objective 2: The circulation system shall be implemented in a manner which achieves the established Traffic Level of Service Policy.

Policy 3: It is the policy of the County that within three years of issuance of the first use and occupancy permit for a development project or five years of the issuance of a finished grading permit or building permit for said development project, whichever occurs first, that the necessary improvements to arterial highway facilities, to which the project contributes measurable traffic, are constructed and completed to attain LOS D at intersections under the sole control of the County.

County of Riverside General Plan Circulation Element

The Riverside County General Plan Circulation Element provides the following policies that are related to the proposed project:

Policy 2.1: Maintain the following countywide target Levels of Service:

- LOS "C" along all County maintained roads and conventional state highways. As an exception, LOS "D" may be allowed in community development areas, only at intersections of any combination of Secondary highways, major highways, urban expressways, conventional state highways or freeway ramp intersections.
- LOS "E" may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.

Policy 2.2: Apply level of service standards to new development via a program establishing traffic study guidelines to evaluate traffic impacts and identify appropriate mitigation measures for new development.

Policy 2.3: Traffic studies prepared for development entitlements (tracts, plot plans, public use permits, conditional use permits, etc.) shall identify project related traffic impacts and determine the "significance" of such impacts in compliance with CEQA.

Policy 2.4: The direct project related traffic impacts of new development proposals shall be mitigated via conditions of approval requiring the construction of any improvements identified as necessary to meet level of service standards.

Policy 2.5: The cumulative and indirect traffic impacts of development may be mitigated through the payment of various impact mitigation fees such as County Development Impact Fees, Road and Bridge Benefit District Fees, and Transportation Uniform Mitigation Fees to the extent that these programs provide funding for the improvement of facilities impacted by development.

Policy 3.6: Require private developers to be primarily responsible for the improvement of streets and highways service access to developing commercial, industrial, and residential areas. These may include road construction or widening, installation of turning lanes and traffic signals, and the improvement of any drainage facility or other auxiliary facility necessary for the safe and efficient movement of traffic or the protection of road facilities.

City of Lake Elsinore General Plan Circulation Element

The following discussion of City of Lake Elsinore General Plan is pertinent to the proposed project because portions of the road network serving the study area are in the city. The City of Lake Elsinore, in general, requires that peak-hour intersection operations be at LOS D or better to be considered acceptable.

Regional Improvement Funding Mechanisms

There are several funded roadway improvement programs that are in place to improve the roadway infrastructure in the study area. For Orange County, the following two roadway improvement programs are currently in place: the Avenida La Pata Supplemental Roadway Fee Program and the South County Roadway Improvement Program. For Riverside County, there is the Transportation Uniform Mitigation Fees (TUMF) program.

Avenida La Pata Supplemental Roadway Fee Program

The Avenida La Pata Supplemental Roadway Fee Program was adopted by the County of Orange Board of Supervisors, and it is administered by the County of Orange Resources and Development Management Department. The purpose of this fee program is to construct Avenida La Pata from Ortega Highway to the City of San Clemente City limits.

South County Roadway Improvement Program

The South County Roadway Improvement Program (SCRIP) was adopted by the County of Orange in 2004 with the approval of the General Plan Amendment for the project proposed by Rancho Mission Viejo and commonly referred to as the "Ranch Plan." The SCRIP establishes a comprehensive framework for implementing transportation improvements throughout an "area of benefit" in south Orange County. The following study area roadway facilities are programmed for improvement under SCRIP:

- Ortega Highway from I-5 to Antonio Parkway/La Pata Avenue
- Antonio Parkway/La Pata Avenue from Ortega Highway to Ladera Ranch
- Antonio Parkway/La Pata Avenue from Ortega Highway to Avenida Hermosa
- Intersection of Antonio Parkway/La Pata Avenue and Ortega Highway

Transportation Uniform Mitigation Fees

The Transportation Uniform Mitigation Fees (TUMF) program is adopted by the Riverside County Board of Supervisors, and it is administered by the Western Riverside County Council of Governments. TUMF, which includes a network of regional facilities, endeavors to spread the cost of improvements on a regional basis through participation of the Riverside County and individual cities. The fees are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases. The following study area roadway segments are programmed for improvement under TUMF:

- Ortega Highway south of Grand Avenue
- Grand Avenue

3.15.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to transportation and traffic, a project could have a significant effect on the environment if it would:

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

As discussed in the Notice of Preparations/Initial Studies (see Appendices A1 and A2 of this EIR), the project does not propose any uses (i.e., blinking strobes, lights) that would affect air traffic patterns or air traffic levels. The closest operating airport, Skylark Airport, is approximately seven miles east of the project site. Phase 2 (north parcel) contains a private unused airstrip that would be converted to residential with implementation of the proposed project. No impacts related to air traffic patterns would occur. In addition, the proposed project would neither directly or indirectly eliminate existing or planned alternative transportation corridors or facilities (e.g., bike paths, lanes, bus turnouts, etc.), and would not conflict with adopted policies, plans or programs supporting public transit, bicycle, pedestrian or other alternative transportation systems. Therefore, no further analysis of the above-described criteria is provided in this EIR.

However, the following comments related to transportation and traffic were received in response to the Notice of Preparations/Initial Studies:

- Describe Ortega Highway accessibility; provide appropriate traffic analyses and mitigation for traffic impacts.
- Analyze potential traffic impacts at Long Canyon Road.
- A Traffic Impact Study is necessary to determine the near and long term impacts to State facilities. Coordinate with Caltrans District 8 for work performed within Caltrans Right-of-Way.

- Recommendation of appropriate traffic analyses and mitigation for traffic impacts.
- Describe public access to the project site.
- The project could result in increased traffic impacts.
- Describe deceleration lanes.

The following thresholds of significance are applicable to the above-described criteria:

- The County of Orange Growth Management Program (GMP) guidelines state that project traffic volumes resulting in a one-percent increase in the volume/capacity ratio of a deficient intersection (i.e., operating at LOS E or F) as compared to the No Project condition is considered a significant impact, and mitigation measures are required to reduce the project's impact to a level of insignificance.
- Based on the County of Riverside traffic study guidelines, a significant direct traffic impact would occur when the addition of project-generated traffic (50 or more peak-hour trips) would cause an intersection that operates at an acceptable level of service under Existing traffic conditions (i.e., LOS D or better) to degrade to an unacceptable level of service (i.e., LOS E or F). If an intersection is projected to operate at an unacceptable level of service without the project, and the project would contribute 50 or more peak-hour trips, the impact is considered a significant direct impact. A significant cumulative impact is identified when an intersection is projected to operate worse than an acceptable level of service standard due to cumulative future traffic and a project-related traffic increase of 50 or more peak-hour trips. Cumulative traffic impacts are created as a result of a combination of the proposed project together with other future developments contributing to the overall traffic impacts requiring additional improvements to maintain acceptable level of service operations with or without the project.

3.15.3 Methodology

The evaluation of traffic levels of service for all study area intersections is based on the methodologies set forth in the 2010 Highway Capacity Manual (HCM) and the thresholds described previously. The HCM has long been a tool critical for the planning, programming, and preliminary engineering of roadways. It provides performance measures for the evaluation of roadway systems and methodology for signalized intersections uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing and timing) to estimate the average delay experienced by motorists traveling through an intersection. In addition, for signalized intersections in Orange County, the volume-to-capacity (v/c) ratio (calculated using the Intersection Capacity Utilization [ICU] methodology) is utilized.

For intersections that are stop sign controlled with stop control on the minor street only, the calculation of LOS is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at these locations, the LOS is determined based on the worst individual movement or movements (usually left turns from the minor street).

The trip generation rates used in the traffic impact analysis are based upon published data in the Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition). To assess future traffic conditions, project generated traffic is combined with existing traffic, ambient growth, and traffic from other surrounding developments. For Existing plus Project conditions, projected future traffic is represented by the sum of existing (2017) traffic and project traffic. For long-range 2035 Conditions, the future traffic forecast is based on the Orange County Traffic Analysis Model (OCTAM). Additional technical methodologies are provided in the traffic impact analysis for the project, which is included as Appendix J of this EIR.

3.15.4 Project Impacts

Impact 3.15-1: Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Trip Generation

As shown in **Table 3.15-3**, the proposed project would generate about 690 daily trips, with about 55 vehicle trips (15 inbound and 40 outbound) during the a.m. peak hour and about 73 vehicle trips (45 inbound and 28 outbound) during the p.m. peak hour. Trip generation rates for the proposed project were derived from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (9th Edition).

All trips generated by the proposed project would enter/exit the project site via Ortega Highway to Long Canyon Road. The entrance to the Phase 1 (south parcel) would be on the south side of Long Canyon Road and the entrance to Phase 2 (north parcel) would be on the north side of Long Canyon Road.

TABLE 3.15-3
PROJECT TRIP GENERATION

Land Use		AM Peak Hour			PM Peak Hour			Daily Total
		In	Out	Total	In	Out	Total	
Single-Family Residential (72 houses)	Rates	0.19	0.56	0.75	0.63	0.37	1.00	9.52
	Trips	14	40	54	45	27	72	685
Vineyard (5 employees)	Rates	0.23	0.03	0.26	0.04	0.22	0.26	1.00 [a]
	Trips	1	0	1	0	1	1	5
Total Project Trips		**15**	**40**	**55**	**45**	**28**	**73**	**690**

a The 2012 Silver Rose Winery and Resort project traffic impact study used a daily trip rate of three trips per employee for a full-production winery. For purposes of this analysis, a weekday average of one trip per employee is assumed because the project' vineyard would not include a production / wine tasting component, and employment activity for vineyard maintenance would occur at irregular intervals.

Source: Urban Crossroads, 2017, using trip generation rates from the Institute of Transportation Engineers, *Trip Generation Manual*, 9th Edition, 2012 (for residential trips), and deriving trip generation rates for the proposed vineyard from the traffic impact study for the Silver Rose Winery and Resort Project (2012).

Trip Distribution and Assignment

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of retail, business, and recreational opportunities, and the proximity to the regional freeway system. The assignment of traffic between the project site and the adjoining roadway system is based upon the project's trip generation and trip distribution, and the proposed arterial highway and local street systems that would be in place by the time of the development's opening. See Appendix J of this EIR for a graphical depiction of a.m. and p.m. peak-hour intersection turning movement volumes at the study intersections.

Existing Plus Project

Less than Significant Impact. As described in Section 2.0, Project Description, the proposed project includes off-site roadway improvements that include installation of a northbound 12-foot wide acceleration lane and a northbound 12-foot wide left turn lane on Ortega Highway; and installing a minimum 22-foot wide southbound deceleration lane on Ortega Highway from Long Canyon Road to 160 feet to the north.

Intersection levels of service for the existing network with the proposed project traffic volumes and the project roadway improvements are shown in **Table 3.15-4** (LOS calculation sheets are in Appendix J of this EIR). As in Table 3.15-4, the proposed project would not result in an unacceptable LOS (LOS E or below). Therefore, the proposed project would result in a less-than-significant impact in the existing plus project condition.

TABLE 3.15-4
EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Intersection	Traffic Control [a,b]	Critical Delay Sec. (V/C Ratio) [b]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Ortega Highway (SR 74) at					
• Antonio Parkway (Orange County) [b]	Signal	43.8 (0.661)	32.0 (0.618)	D	C
• Long Canyon Road (Riverside County)	SSSC	17.4	19.2	C	C
• Monte Vista Street (Riverside County)	SSSC	18.2	24.5	C	C
• Grand Avenue (City of Lake Elsinore)	Signal	14.4	27.8	B	C
Long Canyon Road at					
• South Project Access Road	SSSC	8.5	8.6	A	A
• North Project Access Road	SSSC	8.7	8.8	A	A

a SSSC = Side-Street Stop-Control; Level of service (LOS) is shown for the worst side-street movement(s).
b The volume-to-capacity (v/c) ratio (calculated using the ICU methodology) is presented in parentheses for signalized intersections in Orange County.

Source: Urban Crossroads, 2017.

2020 Plus Project

Less than Significant Impact. The year 2020 traffic volumes were developed using the Orange County Traffic Analysis Model (OCTAM) that accounts for future planned land uses and roadway improvements in the study area. In addition, the vehicular trips that would be generated

from the proposed project were added to the above-described baseline ("without project") 2020 volumes. The a.m. and p.m. peak-hour intersection turning movement volumes in 2020 without the proposed project are provided in **Table 3.15-5**. As shown, the intersections are anticipated to operate at an acceptable level in 2020 without the proposed project.

TABLE 3.15-5
2020 WITHOUT PROJECT TRAFFIC CONDITIONS

Intersection	Traffic Control [a,b]	Critical Delay Sec. (V/C Ratio) [b]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Ortega Highway (SR 74) at					
• Antonio Parkway (Orange County) [b]	Signal	47.9 (0.687)	30.5 (0.632)	D	C
• Long Canyon Road (Riverside County)	SSSC	18.5	29.7	C	D
• Monte Vista Street (Riverside County)	SSSC	18.4	25.6	C	D
• Grand Avenue (City of Lake Elsinore)	Signal	15.5	29.7	B	C

a SSSC = Side-Street Stop-Control; LOS is shown for the worst side-street movement(s).
b For intersections controlled by traffic signals, LOS is determined using the HCM methodology, based on critical delay (in seconds per vehicle). For information purposes, the volume-to-capacity (v/c) ratio (calculated using the ICU methodology) is presented in parentheses for signalized intersections in Orange County.

Source: Urban Crossroads, 2017.

Table 3.15-6 shows that traffic in 2020 with the proposed project and the project roadway improvements would continue to operate at acceptable LOS during peak hours. Therefore, the proposed project would result in a less-than-significant impact in the 2020 with project condition.

TABLE 3.15-6
2020 WITH PROJECT TRAFFIC CONDITIONS

Intersection	Traffic Control [a,b]	Critical Delay Sec. (V/C Ratio) [b]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Ortega Highway (SR 74) at					
• Antonio Parkway (Orange County) [b]	Signal	49.0 (0.692)	31.5 0.644)	D	C
• Long Canyon Road (Riverside County)	SSSC	17.5	20.3	C	C
• Monte Vista Street (Riverside County)	SSSC	18.8	26.4	C	D
• Grand Avenue (City of Lake Elsinore)	Signal	15.6	29.6	B	C
Long Canyon Road at					
• South Project Access Road	SSSC	8.5	8.6	A	A
• North Project Access Road	SSSC	8.7	8.8	A	A

a SSSC = Side-Street Stop-Control; Level of service (LOS) is shown for the worst side-street movement(s).
b For intersections controlled by traffic signals, LOS is determined using the HCM methodology, based on critical delay (in seconds per vehicle). For information purposes, the volume-to-capacity (v/c) ratio (calculated using the ICU methodology) is presented in parentheses for signalized intersections in Orange County.

Source: Urban Crossroads, 2017.

2035 Plus Project

Less than Significant Impact. The year 2035 traffic volumes were developed using the OCTAM that accounts for future planned land uses and roadway improvements in the study area, which include those that have been planned for Rancho Mission Viejo (Ranch Plan) and the City of Lake Elsinore General Plan that include the widening of Grand Avenue through its intersection with Ortega Highway by the City of Lake Elsinore. This project would widen Ortega Highway from two to six lanes (three lanes in each direction), west of the I-15 to the Ortega mountains. This improvement includes turn pockets and a traffic signal installation at the intersection of Ortega Highway and Grand Avenue (City of Lake Elsinore Capital Improvement Plan Budget 2016-17). The vehicular trips that would be generated by the proposed project were added to the baseline ("without project") 2035 volumes to identify traffic volumes that would be generated with implementation of the proposed project.

TABLE 3.15-7
YEAR 2035 WITHOUT PROJECT TRAFFIC CONDITIONS

Intersection	Traffic Control [a,b]	Critical Delay Sec. (V/C Ratio) [b]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Antonio Parkway at Ortega Highway (SR 74) (Orange County) [a]	Signal	110.1 (0.914)	53.4 (0.865)	F	D
Ortega Highway (SR 74) at					
• Long Canyon Road (Riverside County)	SSSC	21.3	57.3	C	F
• Monte Vista Street (Riverside County)	SSSC	25.2	59.7	D	F
• Grand Avenue (City of Lake Elsinore) - with improvement [c]	Signal	12.8	24.6	B	C
• Cow Camp Road (Orange County) [b]	Signal	13.6 (0.607)	13.8 (0.627)	B	B

a SSSC = Side-Street Stop-Control; Level of service (LOS) is shown for the worst side-street movement(s).
b For intersections controlled by traffic signals, LOS is determined using the HCM methodology, based on critical delay (in seconds per vehicle). For information purposes, the volume-to-capacity (v/c) ratio (calculated using the ICU methodology) is presented in parentheses for signalized intersections in Orange County.
c Widening of Grand Avenue, to add a second lane in each direction, is in the City of Lake Elsinore General Plan, and anticipated for the Rancho Mission Viejo (Ranch Plan).

Source: Urban Crossroads, 2017.

As shown in **Table 3.15-7**, the following study intersections are projected to operate at unacceptable LOS during one of the peak hours without project traffic:

- Ortega Highway at Antonio Parkway (LOS F during the a.m. peak hour)
- Ortega Highway at Long Canyon (LOS F during the p.m. peak hour)
- Ortega Highway at Monte Vista Street (LOS F during the p.m. peak hour)

Table 3.15-8 shows the project condition with the project traffic in 2035. As shown, the intersection of Antonio Parkway at Ortega Highway would continue to operate at an unacceptable LOS of F in the a.m. peak hour. A comparison of Table 3.15-7 and Table 3.15-8 shows that the v/c ratio would increase from 0.914 in the a.m. peak hour without the project to 0.918 with the proposed project, which is less than a 1 percent increase in the v/c ratio of the deficient intersection (the Orange County threshold). Therefore, the proposed project would not result in an impact at the intersection of Antonio Parkway at Ortega Highway in the 2035 with project condition.

As shown on Table 3.15-8, operation of Ortega Highway at Long Canyon Road would be improved (from LOS F in the p.m. peak hour to LOS D in the p.m. peak hour) with the project implemented left turn lane. In addition, the anticipated LOS deficiency at the intersection of Ortega Highway and Monte Vista Street is based on the nominal approach volumes on Monte Vista Street, which is not anticipated to disrupt the flow of traffic along Ortega Highway. Also, the east leg of this intersection currently exists as a gated (private) driveway and the project would add less than 50 trips at this intersection (Urban Crossroads 2017). As a result, project impacts at the intersection of Ortega Highway and Monte Vista Street would be less than significant.

TABLE 3.15-8
YEAR 2035 WITH PROJECT TRAFFIC CONDITIONS

Intersection	Traffic Control [a,b]	Critical Delay Sec. (V/C Ratio) [b]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Antonio Parkway at Ortega Highway (SR 74) (Orange County) [b]	Signal	110.6 (0.918)	51.8 (0.865)	F	D
Ortega Highway (SR 74) at					
• Long Canyon Road (Riverside County)	SSSC	18.1	28.2	C	D
• Monte Vista Street (Riverside County)	SSSC	25.7	62.3	D	F
• Grand Avenue (City of Lake Elsinore) - with improvement [c]	Signal	14.5	24.9	B	C
• Cow Camp Road (Orange County)	Signal	13.7 (0.613)	14.0 (0.634)	B	B
Long Canyon Road at					
• South Project Access Road	SSSC	8.5	8.6	A	A
• North Project Access Road	SSSC	8.7	8.8	A	A

a SSSC = Side-Street Stop-Control; Level of service (LOS) is shown for the worst side-street movement(s).
b For intersections controlled by traffic signals, LOS is determined using the HCM methodology, based on critical delay (in seconds per vehicle). For information purposes, the volume-to-capacity (v/c) ratio (calculated using the ICU methodology) is presented in parentheses for signalized intersections in Orange County.
c Widening of Grand Avenue, to add a second lane in each direction, is in the City of Lake Elsinore General Plan, and anticipated for the Rancho Mission Viejo (Ranch Plan).

Soure: Urban Crossroads, 2017.

Construction Impacts

Less than Significant Impact. Construction of the project would occur in two sequential phases, on Phase 1 (south parcel) first and then on Phase 2 (north parcel). However, construction of Phase 2 (north parcel) is dependent on economic factors including housing market conditions at the time

of construction. Construction related traffic would vary depending on the activity, and construction would occur in the following phases: (1) site preparation; (2) grading and excavation; (3) construction of drainage, utilities, and subgrade infrastructure; (4) building construction; and (5) paving and application of architectural coatings. Grading for the project would be balanced on-site, and there would be no import or export of soils.

Construction activities would be limited to the hours between 7:00 a.m. to 5:00 p.m., Monday through Saturday, excluding federal holidays, as included by Project Design Feature PDF-21 and would be consistent with the County's Noise Ordinance.

Construction activities that would generate offsite traffic would include the delivery of construction supplies, materials, and equipment to the project site; the daily arrival and departure of construction workers; and the removal of construction debris. Large construction delivery and haul trucks have slower movements and larger turning radii compared to passenger vehicles, which may slow traffic along Ortega Highway; however, the existing capacity of the roadway, would be able to accommodate these temporary and intermittent truck trips. As described in the Project Description, the maximum number of workers on the project site would be 50 during the building construction phase. The anticipated number of employee plus equipment/materials haul trips would be less than the 690 daily trips that would be generated from operation of the proposed project (as shown in **Table 3.15-3**), and as described above, impacts related to 690 daily trips would be less than significant. Therefore, impacts related to the temporary construction related traffic that would generate less than 690 daily trips would also be less than significant. Overall, traffic impacts related to construction would be less than significant.

Impact 3.15-2: Would the project conflict with an applicable congestion management program, including, but not limited to level of service standard and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less than Significant Impact. As described above, Ortega Highway is part of the Orange County and Riverside County CMP highway systems, but none of the intersections directly serving the project site are within the CMP system (OCTA, 2015). In addition, the CMP criteria require CMP related traffic analysis for project that generate 2,400 daily trips or 200 peak-hour trips. As provided in **Table 3.15-3**, the proposed project would result in 690 daily trips, that includes a total of 55 a.m. peak hour trips and 73 p.m. peak hour trips. Thus, the project does not meet the criteria requiring a CMP analysis on the Orange County CMP system, and impacts would be less than significant.

For Riverside County, the CMP only requires analysis and a deficiency plan if the proposed development causes the LOS on a non-exempt CMP facility to fall to below the LOS E standard. As described above, the proposed project would not result in significant impacts at any CMP facility in Riverside County. Thus, impacts related to conflict with an applicable congestion management plan would be less than significant.

Impact 3.15-3: Would implementation of the proposed project 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. The project site is generally vacant and is surrounded by sparse rural development. The project would develop residential uses on the project site. No incompatible uses would exist within or adjacent to the project area. As provided in the Project Description, the project includes 34.5 acres of vineyards throughout both phases of the project. The vineyards are included in the fuel modification and landscaping zones that surround and buffer the residential development areas. The grapes would be harvested and sold by the HOA that would be developed for the project. Thus, the project may involve some farm equipment that may be needed for harvesting grapes. However, the location of the harvesting equipment would be in the landscaped portions of the project, at limited times of the year. Due to the limited and intermittent grape harvesting activities in the rural and low density area of the proposed project, the harvesting of grapes would not substantially increase hazards related to incompatible uses, and impacts would be less than significant.

Access for the project site would be provided from Long Canyon Road, which intersects with Ortega Highway. Stop signs, stop bars, and stop legends would be provided for vehicles exiting the project at the intersection of Long Canyon Road. The gated entries to the development areas would be constructed and setback from Long Canyon Road at a distance that complies with the Orange County Standard Plan No. 1107, which is a minimum of 100 feet from the curb line of Long Canyon Road, to provide adequate vehicle stacking space, included as Project Design Feature PDF-8. In addition, the project includes provision of an eastbound left-turn lane (300-foot storage length), a westbound right-turn lane (320-foot storage length), and a westbound acceleration lane at the project access point on Ortega Highway (Project Design Feature PDF-7).

Evaluation of the project access intersection with Ortega Highway indicates that available sight distances would be inadequate without trimming of existing trees and other vegetation that encroaches into the line of sight on the south side of Long Canyon Road. In addition, the following standard County condition must be met to receive permitting approval from Orange County, which would ensure that adequate sight distance would be provided:

T07: Prior to the issuance of any grading permits, the applicant shall provide adequate sight distance at all street intersections and all driveways per Standard Plan 1117, in a manner meeting the approval of the Manager, Traffic Engineering. This includes any necessary revisions to the plan such as removing slopes or other encroachments from the limited use area.

In addition, all onsite roadways would be developed consistent with the County's design components (Project Design Feature PDF-9). With implementation of these Project Design Features and the County standard roadway requirements that are necessary to receive project permits from the County's Building and Safety Department, impacts related to hazards due to a design feature would be less than significant.

Impact 3.15-4: Would the project result in inadequate emergency access?

Less than Significant Impact. The proposed project would involve the construction of new housing, onsite roadways, and off-site turning lanes to access the project site. As stated above, the turning lanes and onsite roadways have been designed to Caltrans (off-site) and County (on-site) standards that would provide adequate access to the project site from a traffic operations and emergency access standpoint. In addition, prior to construction permit approval the roadway plans require review and approval by Caltrans (off-site only), County Public Works Department, and the Orange County Fire Authority to ensure adequate design for emergency access pursuant to County requirements. The Standard County plan check and permitting procedures and Caltrans coordination for the improvements to Ortega Highway are required to ensure that planned emergency access is provided pursuant to the requirements of the emergency access codes. Therefore, the proposed project would not result in inadequate emergency access, and impacts would be less than significant.

3.15.5 Cumulative Impacts

The geographic scope of for traffic impacts include the study intersections analyzed in year 2035, which include projects that could result in cumulative traffic projects. The traffic analysis of future (Year 2035) traffic conditions took into account cumulative projects and regional growth; thus, provides a cumulative analysis of potential impacts. As described above and shown in **Table 3.15-8**, with anticipated road improvements, the study intersections would operate at acceptable LOS, except for the intersections of Ortega Highway at Antonio Parkway, and Ortega Highway at Monte Vista Street, where the project would result in a limited number of a.m. and p.m. peak hour trips.

A significant cumulative impact is identified when a facility is projected to operate below the level of service standards due to cumulative future traffic AND a project-related traffic increase as measured by 50 or more peak hour trips. Cumulative traffic impacts are created as a result of a combination of the proposed project together with other future developments contributing to the overall traffic impacts requiring additional improvements to maintain acceptable level of service operations with or without the project. Based on this criteria, the project is not anticipated to contribute a significant impact to Antonio Parkway/Ortega Highway or Ortega Highway / Monte Vista Street because the project would add less than 50 trips to these locations during peak hours. Therefore, traffic impacts associated with the proposed project would be less than cumulatively considerable, and cumulative impacts would be less than significant.

3.16 Utilities and Service Systems

The purpose of this section is to analyze the potential impacts of the proposed project on utilities and service systems. The analysis focuses on whether the project's estimated water demand, wastewater generation, and solid waste generation would be accommodated by existing and future planned infrastructure (including stormwater drainage facilities), and proposes mitigation measures as needed. Portions of the following analysis are based on various resources including the Elsinore Valley Municipal Water District's Urban Water Management Plan (EVMWD) (UWMP) (EVMWD, 2016); the Onsite Wastewater Treatment System Technical Memorandum (PACE, 2014), and a Response to County Comments on Onsite Wastewater Treatment Systems Memorandum (Terrestrial, 2014a), located in Appendices D2 and D3 of this EIR; a Biological Resource Analysis (PCR, 2014), located in Appendix C1 of this EIR; and the WQMPs for both project site parcels (Hunsaker, 2014a; Hunsaker, 2014b) located in Appendices H1 and H2 of this EIR.

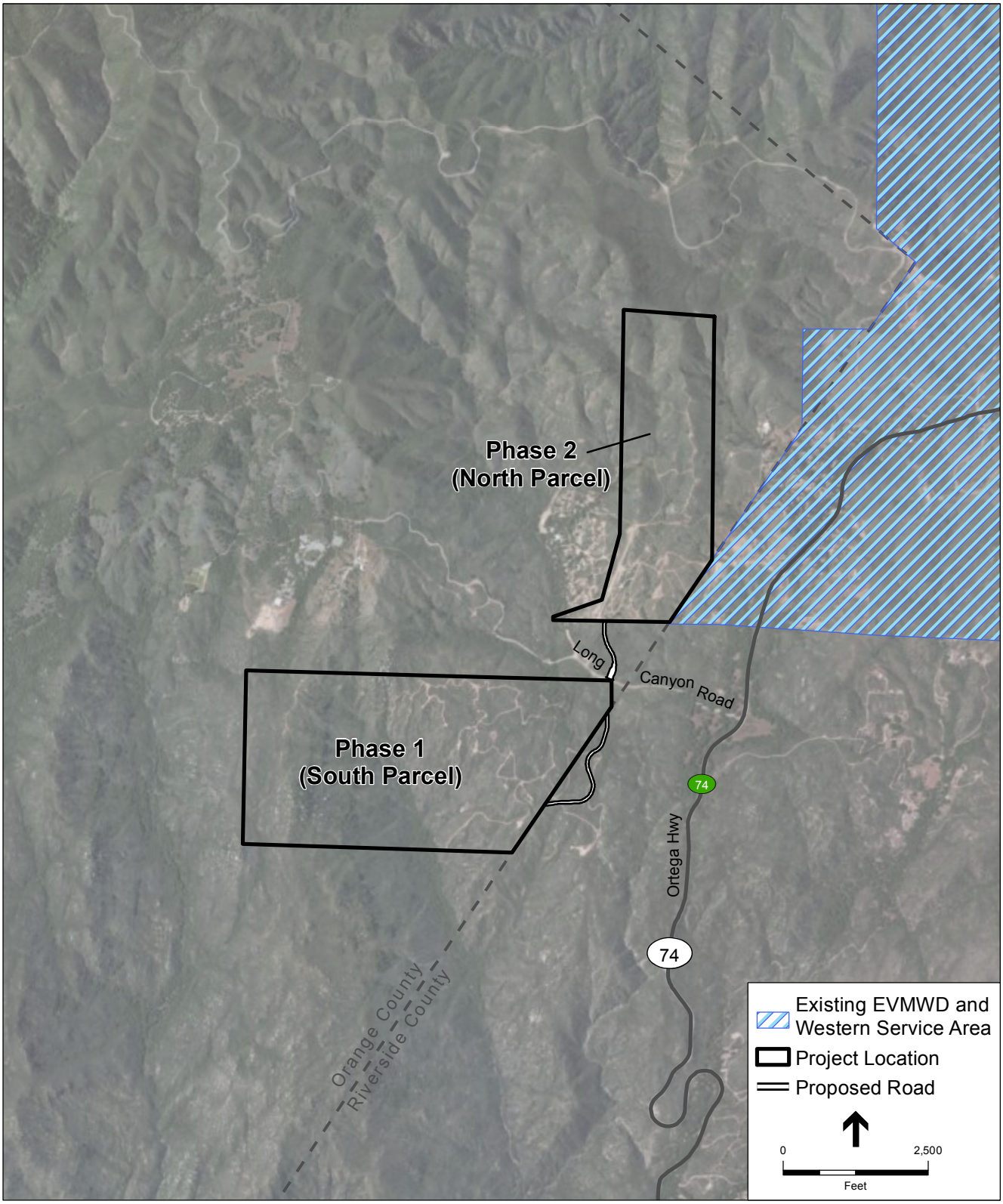
3.16.1 Environmental Setting

Existing Conditions

Water Supply

The proposed project includes the annexation of 133.4 acres of the project site (the area needing domestic water service) into the service area of EVMWD. Areas of the project site that would remain in natural open space or do not require irrigation would not be annexed into the water service area. EVMWD is located in western Riverside County, encompasses 96 square miles, and is a sub-agency of Western Municipal Water District (Western) who is a member agency of Metropolitan Water District (MWD) of Southern California (EVMWD, 2016a). EVMWD receives imported water from MWD through its member agency, Western. EVMWD is wholly within the boundaries of Western, which is wholly within the boundaries of MWD. Because of this arrangement, no territory can be annexed into EVMWD without also annexing into the boundaries of Western and MWD (EVMWD, 20016a). The proposed service area boundary change requires approval by Riverside County Local Agency Formation Commission (Riverside LAFCO). See **Figure 3.16-1** for the proximity of the project site to the existing Western and EVMWD service area boundary.

EVMWD provides over 42,692 potable service connections to a service area populated with approximately 140,000 people. Average potable water supplies total 61,600 acre-feet per year (AFY). EVMWD obtains its potable water supplies from imported water from Metropolitan (68 percent), local surface water from Canyon Lake (9 percent), and local groundwater (22 percent) (EVMWD, 20016a). As a member agency of Western, EVMWD purchases treated imported MWD water from Western through the Auld Valley Pipeline (AVP) and the Temescal Valley Pipeline (TVP). The AVP and the TVP are located on the southeastern and northwestern end of EVMWD's distribution system, respectively.



SOURCE: ESRI.

The Preserve at San Juan . 120826

Figure 3.16-1

Project Site Proximity to Existing Elsinore Valley Municipal Water District (EVMWD) and Western Municipal Water District (Western) Service Area Boundary

EVMWD owns Canyon Lake, otherwise known as Railroad Canyon Reservoir. The reservoir impounds local runoff from the San Jacinto River watershed and stores water behind Railroad Canyon Dam, which is treated by the Canyon Lake Water Treatment Plant (WTP). Due to siltation, the original storage capacity of 12,000 acre-feet (AF) has been reduced to 4,600 AF of water (EVMWD, 2016). EVMWD has access to groundwater from Elsinore Basin, Coldwater Basin, San Bernardino Bunker Hill Basin, Rialto-Colton and Riverside-North Basin. Almost all of the groundwater production that is used for potable use occurs in the Elsinore Basin (EVMWD, 2016).

EVMWD has a six-inch water main that extends from the Tomlin No. 1 Booster Station (located on the northwestern boundary of Lake Elsinore) and travels southwest, providing potable water to upgradient communities along Ortega Highway. This transmission main runs adjacent to the north portion of the project site along Ortega Highway, and then intersects the project site as it travels west along Long Canyon Road to its terminus at the Los Pinos No. 2 Reservoir, located west of the project site at an elevation of approximately 3,500 feet (see Figure 2-12 of this EIR for a layout of the existing and proposed water distribution system). The existing transmission main would supply water to the proposed project.

Water Demand

EVMWD prepared an UWMP in 2016 in compliance with the California Urban Water Management Plan Act (UWMP Act). The purpose of the plan is to document EVMWD's projected water demands and its plans for delivering water supplies to EVMWD's water service area through 2040 (EVWMD, 2016). In 2015, EVMWD potable water deliveries totaled 21,333 AF. **Table 3.16-1** shows the EVMWD water deliveries by water use sector in 2015 and those projected through 2040.

TABLE 3.16-1
ACTUAL AND PROJECTED POTABLE WATER DELIVERIES FOR 2015 THROUGH 2040

Water Use Sectors	2015 (AF)	2020 (AF)	2030 (AF)	2040 (AF)
Single family	13,691	22,848	29,006	35,041
Multi-Family	789	1,316	1,671	2,019
Commercial	3,021	5,042	6,403	7,733
Institutional/governmental	1,095	1,827	2,320	2,802
Landscape	1	2	3	4
Wholesale	539	900	1,142	1,380
Other	2,197	2,464	2,646	2,822
Total	**21,333**	**34,400**	**43,200**	**51,800**

SOURCE: EVMWD, 2016.

Water demand in all development areas is expected to increase. EVMWD's UWMP includes a discussion of project future water demands and potential water projects that can be implemented to meet this demand (EVMWD, 2016). As described in the EVMWD Water Master Plan, the water demand in 2040 (shown in **Table 3.16-1**) would result in an average annual demand of 75.0

million gallons daily (mgd), and a maximum day demand of 80.9 mgd. The Water Master Plan and UWMP describe that EVMWD will be able to meet the maximum day demand with future supplies of 88.89 mgd (EVMWD, 2016). Thus, EVMWD has developed water supply demand and projections through development of its 2016 Water Master Plan and 2016 UWMP, which details that water supplies will be able to meet the anticipated demand in 2040 (EVMWD, 2016).

Stormwater Facilities

Currently, no stormwater drainage infrastructure exists on the project site. Long Canyon Creek flows through the southwest corner of Phase 2 (north parcel) and through the northeast corner of Phase 1 (south parcel), eventually joining with the southwest-flowing San Juan Creek a mile downstream of Phase 1 (south parcel) southern boundary (PCR, 2014). Runoff from the western portion of the Phase 1 (south parcel) currently drains southerly via un-named tributary to San Juan Creek. Runoff from both phases drains southeasterly to Long Canyon Creek. Refer to Figure 3.9-2 for water bodies in the project vicinity.

Wastewater

EVMWD is the nearest service provider for wastewater collection and treatment to the project site; however, the project site is not located within the vicinity of existing wastewater infrastructure. As described below, the proposed project would install septic systems for each residential parcel, and would not obtain service for wastewater treatment and disposal from EVMWD. Within its service area, EVMWD collects and conveys wastewater generated by residences and businesses to one of three tertiary level treatment facilities.

Solid Waste

The project would be served by a commercial residential waste hauler that serves the project vicinity and would include curbside waste, recycling, yard waste pickup, bulk waste and hazardous material pickup, which are typical residential solid waste services.

The closest Riverside County landfill is the El Sobrante Landfill, located 10 miles north of the project site in the City of Corona. The landfill is permitted to accept up to 16,054 tons of waste per day through 2044 (Calrecycle, 2016). In August 2016, the average daily amount of solid waste disposed at the landfill was 8,534 tons (Calrecycle September Inspection Report); thus, having an average daily additional capacity of 7,520 tons per day (CalRecycle, 2016).

The closest Orange County landfill is the Prima Deshecha Sanitary Landfill, located 11 miles southwest of the project site, in the City of San Juan Capistrano. The landfill is permitted to accept 4,000 tons per day and is permitted to operate through 2067 (Calrecycle 2016). In September 2016, the maximum daily amount of solid waste disposed at the landfill was 2,075 tons (Calrecycle September Inspection Report); thus, having an average daily additional capacity of 1,925 tons per day (CalRecycle, 2016).

In addition, the Bowerman Sanitary landfill located 11002 Bee Canyon Access Road in Trabuco Canyon, which is approximately 40 miles from the project site, is permitted to accept 11,500 tons per day of solid waste through 2053. In September 2016, the maximum daily amount of solid waste disposed at the landfill was 7,680 tons (Calrecycle September Inspection Report); thus, the landfill has an average daily additional capacity of 3,820 tons per day.

Regulatory Setting

Clean Water Act

The Federal Water Pollution Control Act or Clean Water Act (CWA) serves to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The CWA was created in 1972, and then amended in 1977, and again in 1987 when the NPDES program was created. NPDES requires a permit for discharge of pollutants from industrial sources and publicly owned treatment works into navigable waters. The discharge must meet applicable requirements, which are outlined in the CWA and which reflect the need to meet federal effluent limitations and state water quality standards.

Section 303 (d) of the CWA states that each state shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301 (b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters. The state shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such water (see Section 3.8, *Hydrology and Water Quality*, of this EIR).

California Administrative Code

The California Administrative Code (CAC) establishes efficiency standards for reducing water usage in new water fixtures. Title 24 CAC, Section 25352, addresses pipe insulation requirements, which reduce the amount of hot water used before reaching equipment and fixtures. Title 20 CAC (Public Utilities and Energy), Section 1604, provides efficiency standards for water fixtures including lavatory faucets, showerheads, and sink faucets.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (AB 939) redefined solid waste management in terms of both objectives and planning responsibilities for local jurisdictions and the state. AB 939 was adopted to reduce the volume and toxicity of solid waste that is landfilled and incinerated by requiring local governments to prepare and implement plans to improve the management of waste resources. AB 939 required each of the cities and unincorporated portions of the counties to divert a minimum of 25 percent of the solid waste sent to landfills by 1995 and 50 percent by the year 2000. To attain goals for reductions in disposal, AB 939 established a planning hierarchy utilizing new integrated solid waste management practices. These practices include source reduction, recycling and composting, and environmentally safe landfill disposal and transformation. Other state statutes pertaining to solid waste include compliance with the California Solid Waste Reuse and Recycling Act of 1991 (AB 1327), which requires adequate areas for collecting and loading recyclable materials within a project site. As a new waste generator, the proposed project would be subject to the requirements of these solid waste provisions, as enforced by the County of Orange.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "waters of the state," file a report of waste discharge that includes a

characterization of the discharge including design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices used, and a description of disposal methods, and a site map.

State Water Resources Control Board – Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems

Onsite wastewater treatment systems are useful and necessary structures that allow habitation at locations that are removed from centralized wastewater treatment systems. On June 19, 2012, the State Water Resources Control Board adopted Resolution No. 2012-0032—the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of On-site Wastewater Treatment Systems which establishes a statewide, risk-based, tiered approach for the regulation and management of onsite wastewater treatment system installations and replacements and sets the level of performance and protection expected from onsite wastewater treatment systems in order to avoid water quality degradation and protect public health. The policy lists standards for existing and replacement onsite wastewater treatment systems, as well as corrective action requirements for failing or potentially failing systems. The policy also includes minimum monitoring and reporting requirements; exemption criteria; criteria for determining when an existing onsite wastewater treatment system is subject to major repair, and a conditional waiver of waste discharge requirements (SWRCB, 2012a). The policy also conditionally waives the requirement for owners of wastewater treatment systems to apply for and receive Waste Discharge Requirements in order to operate their systems when they meet the conditions set forth in the Policy. The San Diego RWQCB was required to incorporate these standards into its Water Quality Control Plan (Basin Plan) by May 13, 2014 (SWRCB, 2012b).

California Plumbing Code

"Nonpotable Reuse Systems" of the 2010 California Plumbing Code (Title 24, Part 5, Chapter 16A, Part 1) details definitions and specific design requirements for graywater systems (tanks, irrigation fields and disposal fields). Table 16A-1 describes the required distances of graywater systems from various land features, such as building structures, water supply wells, and streams and lakes. Specifically, a horizontal distance of 100 feet must be maintained between streams and graywater irrigation fields (IAPMO, 2014).

Regional Water Quality Control Board – Guidelines for New Community and Individual Sewerage Facilities

The RWQCB adopted Guidelines for New Community and Individual Sewerage Facilities (Resolution No. 79-44) on June 25, 1979. An updated set of guidelines is included in the 2011 Basin Plan, which supersedes Resolution No. 79-44 and has the goal of improving the efficiency of the review process, eliminating unnecessary Regional Board regulation, and improving protection of ground water quality.

Authority deferral to a County health officer in regard to onsite wastewater treatment systems would occur if the project operator satisfies the following conditions: (1) the use of new individual subsurface disposal systems for any subdivision of land will be in the best public interest; (2) individual disposal systems will comply with all existing county design criteria; (3)

the cumulative impact from proposed individual disposal system(s) or from new commercial and/or industrial development(s) will not cause adverse impacts to the beneficial uses of ground water; (4) individual disposal systems will meet the minimum unsaturated soil thickness between the bottom of leach lines or the bottom of seepage pits and the historic high ground water level. The minimum unsaturated soil thickness is nine feet for soils with good percolation rates, 12 feet for soils with moderate percolation rates, and 14 feet for soils with poor percolation rates. Exceptions to the unsaturated soil thickness criteria may be allowed by the appropriate County health officer, based upon knowledge of local site conditions.

Upon receipt of the report of waste discharge for the proposed onsite wastewater treatment systems, the San Diego RWQCB would determine whether the proposed project would meet the above listed criteria and authority would defer to the County Department of Health for regulation and protection of groundwater quality.

Orange County On-Site Sewage Absorption System Guidelines

Required as part the Orange County Building Plan Check, the Orange County On-site Sewage Absorption System Guidelines are intended to provide a uniform approach to percolation testing requirements and design criteria of an onsite sewage absorption system. The Orange County Public Works Department's approval of proposed onsite sewage systems may be either a requirement for recordation of a parcel/tract map or a requirement before building/structural permits are issued. There are two main conditions for approval of an onsite sewage system: (1) percolation tests must be performed in accordance with County procedures for leach fields and/or seepage pits; and (2) the system must be designed in accordance with County standards.

Four copies of the engineer's soil percolation reports must be submitted to the Plumbing Plan Check Section at the Orange County Public Works Department. All reports must include a log of all soil borings and percolation tests as well as plans showing a designated system. Reports and plans submitted to obtain Building Permits must include (Orange County, 2014):

- Depth to groundwater;
- Depth to any impervious layers;
- Acceptable result of six percolation tests distributed throughout an area set aside for trench leach fields and/or at least one passing percolation for seepage pits for the proposed dwelling;
- Distance between trenches or seepage pits;
- Location of property lines;
- Drainage courses;
- Soils characteristics;
- Trench width or pit diameter;
- Pit depth or depth of gravel below pipe;
- Topographic lines, if steep slopes exist;
- Footprint of house;
- Outline of septic tank and distribution box; and

- The plan must reflect all conditions after precise grading.

Orange County Drainage Area Management Plan

The Orange County Drainage Area Management Plan (DAMP), updated in 2007, documents specific water pollutant control elements and is the primary policy, planning and implementation document for municipal NPDES Stormwater Permit compliance within the County. The main objectives of the DAMP are to present a plan that satisfies NPDES permit requirements and to evaluate the impacts of urban stormwater discharges on receiving waters. Instead of being viewed as single document, the DAMP serves as the foundation for a series of model programs, LIPs and watershed implementation plans. LIPs serve as a baseline program with detailed DAMP implementation information and are watershed-specific. The DAMP requires the effectiveness of each LIP element to be assessed, and through water quality testing and public input, for BMPs to be enhanced.

Orange County Local Implementation Plan

While the 2007 DAMP provides a foundation for the Orange County Stormwater Permittees to implement model programs designed to prevent pollutants from entering receiving waters to the maximum extent practicable, 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 and each city and the County have developed a comprehensive LIP that is specific to their jurisdiction (Orange County, 2016). As the proposed project is located in unincorporated Orange County, it would be subject to the Orange County 2010-2011 LIP.

The 2010-2011 Orange County LIP was prepared as a compliance program for the San Diego RWQCB Fourth Term Municipal Separate Storm Sewer System Permit. The main objectives of this LIP are to fulfill the County's commitment to present a plan that satisfies the requirements of its Municipal Separate Storm Sewer System Permit and to evaluate and reduce the impacts of urban stormwater runoff on the beneficial uses of receiving waters. This LIP, in conjunction with the Countywide programmatic DAMP, is the principal policy and guidance document for the County's NPDES stormwater program (Orange County, 2016).

The LIP characterizes priority projects based on various characteristics as specified by the San Diego Regional Board and requires the preparation of a project-specific WQMP. The WQMP is based on a site assessment which identifies site-specific and targeted watershed pollutants. The assessment results then identify which BMPs are incorporated into the project site. Required BMPs include site design BMPs (e.g., permeability maximization), source control BMPs (e.g., street sweeping), and treatment control BMPs (e.g., vegetated swales). Hydromodification controls as specified in the South Orange County Hydromodification Management Plan (HMP) must also be incorporated. The LIP also requires post-construction BMP inspection and maintenance in compliance with Municipal Separate Storm Sewer System Permit requirements.

Hydromodification Management Plan for South Orange County

This HMP was prepared to comply with the San Diego RWQCB Municipal Separate Storm Sewer System Permit (Order R9-2015-0100, which requires that an HMP be developed and implemented to manage increases in runoff discharge rates and durations from all PDPs.

Hydromodification refers to changes in the magnitude and frequency of stream flows and its associated sediment load due to urbanization or other changes in the watershed land use and hydrology. It also encompasses the resulting impacts on receiving channels, such as erosion, sedimentation, and potentially degradation of in-stream habitat. The HMP seeks ways to mitigate erosion impacts by establishing requirements for controlling runoff from new development.

County of Orange General Plan Public Services & Facilities Element

Waste Management

Goal: Maintain a competitive rate for disposal in Orange County.

Policy 3: To promote the utilization of waste recycling and reuse measures which extend the operating life of existing solid waste facilities.

Water System

Goal 1: Encourage the planning and development of a water conveyance and distribution system to meet the County's future demand.

Policy 1: To ensure the adequacy of water system capacity and phasing, in consultation with the service providing agency(ies), in order to serve existing and future development as defined in the General Plan.

Wastewater System

Goal 1: Support the planning and development of a wastewater system to meet both the County's demand and attain water quality goals.

Policy 1: To protect quality in both delivery systems and groundwater basins through effective wastewater system management.

Policy 3: To ensure the adequacy of wastewater system capacity and phasing in consultation with the service providing agency(ies) in order to serve existing and future development as defined by the General Plan.

3.16.2 Thresholds of Significance

The *CEQA Guidelines* Appendix G provides guidance for assessing the significance of potential environmental impacts. Relative to utilities and service systems, a project could have a significant effect on the environment if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- 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 impacts;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects;

- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- 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;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and
- Comply with federal, state and local statutes and regulations related to solid waste.

It was determined in the NOPs/Initial Studies (see Appendices A1 and A2 of this EIR) that implementation of the proposed project would not result in impacts related to wastewater treatment capacity. The proposed project would install onsite wastewater treatment systems on each residential lot, which would treat wastewater, and the resulting effluent would be used for irrigation. Thus, the proposed project would not result in any impacts related to wastewater capacity of service provider, and no impacts would occur. Therefore, no further analysis of this significance criterion is included in the EIR.

As described in Section 1.0, *Introduction*, Notice of Preparations and Initial Studies were prepared and circulated for public review in both 2013 and 2014; the following comments related to utility and service system topics were received:

- Evaluate the efficiency and reliability of public services
- Provide statement to clarify the proposed annexation to Metropolitan Water District, Western Municipal Water District, and the Elsinore Valley Municipal Water District.
- Describe if the water pipelines supplying the project be new or would the existing pipelines be used.
- Potential impacts related to utility infrastructure installation.

3.16.3 Methodology

The significance determination for the utilities and service systems impact analysis is based on a review of existing literature as well as the WQMPs prepared for both project site parcels (Hunsaker, 2014a; Hunsaker, 2014b) located in Appendices H1 and H2 of this EIR, respectively. These assessments presented findings, conclusions, and recommendations concerning development of the project sites based on the engineering analysis of geotechnical properties of the subsurface conditions, evaluation of geotechnical properties of soils, and a summary of findings, conclusions, and recommendations. The sections that follow discuss the identified impacts and the measures that would be incorporated to mitigate significant impacts.

3.16.4 Project Impacts

Impact 3.16-1: Would the project exceed the wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less than Significant Impact with Mitigation Incorporated. Based on the average generation unit of 320 gallons of wastewater per day (gpd) per household (PACE, 2014), the proposed residents of the 72 total households from both phases would generate a total of approximately 23,040 gpd of wastewater, which would be treated and disposed of through the use of onsite wastewater treatment systems located on each lot. The onsite wastewater treatment systems installed on each lot would consist of three components: (1) a 1,500-gallon septic tank; (2) three modular peat fiber biofilters; and (3) a 300-gallon water reuse pump station. Approximately 320 gallons per day would be emitted for irrigation of approximately 13,100 square feet; treated effluent would be supplemented with potable water to meet this irrigation demand when necessary.

The project site is located within the jurisdiction of the San Diego RWQCB, who was required to incorporate the SWRCB Policy into its specific Basin Plan by May of 2014. The project operator would not be required to file a report of waste discharge for the proposed onsite wastewater treatment systems, so long as the systems are designed in compliance with the SWRCB Policy. The project would comply with the Orange County Guidelines and SWRCB Policy through implementation of Mitigation Measure MM 3.6-2, in Section 3.6, *Geology and Soils*, which requires the project operator to design and operate the septic system in compliance with the Orange County On-site Sewage Absorption System Guidelines and SWRCB On-Site Wastewater Treatment System Policy. The siting and design of onsite wastewater treatment systems would be designed according to Tier 2 standards, which means Orange County Public Works would supervise the design and approval of the systems.

In addition, components of the onsite wastewater treatment system would be setback from structures, property lines, and the top of descending slopes to ensure appropriate function, as required by the existing State Plumbing Code and County and RWQCB onsite wastewater system requirements, which would be verified by the County's Building and Safety Department prior to approval of permits to operate. Furthermore, Mitigation Measure MM 3.6-3 requires the HOA to educate residents about the proper use and maintenance of septic systems to prevent damage and failure. The septic tanks would also be emptied of sludge regularly and transported to disposal by a County-registered waste hauler.

In the case of a septic malfunction, prior to an overflow event, the system includes high water level alarms that would notify the homeowner and the HOA of a potential overflow condition, which would allow time for corrective action. If an overflow still occurs and the soil becomes saturated, the subsurface irrigation system would shut down and the 1500-gallon emergency storage tank would be used for up to five days of storage.

Overall, the onsite wastewater system would be installed and operated in compliance with County, SWRCB, and RWQCB requirements, which would be verified by the County prior to permit approval; therefore, impacts related to exceedance of RWQCB wastewater treatment requirements from the proposed onsite wastewater treatment systems would be less than significant with implementation of existing requirements, Project Design Features, and mitigation measures.

Mitigation Measures

MM 3.6-2 *(Provided in Section 3.6, Geology and Soils under Impact 3.6-5)*

MM 3.6-3 *(Provided in Section 3.6, Geology and Soils under Impact 3.6-5)*

Impact 3.16-2: Would the project 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 impacts?

Less than Significant Impact.

Water Facilities

The proposed project would require both offsite and onsite water infrastructure improvements to provide appropriate water distribution and pressure. The improvements have been coordinated with EVMWD since 2013 (as shown in Appendix K). EVMWD has already provided will-serve letters in 2013, 2015, and 2016. In addition, EVMWD has been planning to provide water services to the project area since at least 2006, when a Water System Plan of Service was prepared by EVMWD (June 2006) that describes the ability of EVMWD to provide water services to the project area at a greater density than is currently proposed.

The off-site improvements for the proposed project would extend water supplies from the existing six-inch water main located within the Long Canyon Road right-of-way to the project site. The new onsite water distribution facilities would include a 12-inch distribution line that would be constructed throughout the developed portions of the project site. In addition, the existing six-inch main would feed two new above ground water storage reservoirs; one 615,000 gallon and one 525,000 gallon. The reservoir site on the Phase 1 (south parcel) would be 615,000 gallons and would be located in the northwestern-most part of the Phase 1 development area. The reservoir in the Phase 2 (north parcel) would be 525,000 gallons and would be located at the far northern end of the Phase 2 parcel development area. Both reservoirs would be sited at elevations sufficient to provide water to the respective development phases via gravity flow. New distribution mains from each reservoir would be designed and installed in cooperation with EVMWD to provide water to the respective development phases. The new mains are sufficiently sized based on peak flow demand and fire-flow requirements as required by EVMWD and OCFA standards for service provision and fire protection. These improvements designed pursuant to EVMWD and OCFA requirements would ensure that the proposed project would have sufficient water supply.

The construction of these facilities is included within the project, and have been evaluated throughout this EIR. For example, air quality emissions from construction of the water facilities are included in the Air Quality evaluation in Section 3.3. In addition, construction activities would be required to comply with all County development standards regarding construction noise, air quality, dust suppression, erosion control (through the required SWPPP) and other construction related potential effects as described throughout this EIR. Furthermore, with implementation of the Project Design Features and mitigation measures within this EIR, which would be verified by the County Building and Safety Department prior to permit approval,

impacts related to construction of the water facilities that are needed to serve the proposed project would be less than significant.

Wastewater Facilities

As described above, onsite wastewater treatment systems would be installed on each residential lot, and would consist of three components: (1) a 1,500-gallon septic tank; (2) three modular peat fiber biofilters; and (3) a 300-gallon water reuse pump station. As described above for water facilities, construction of the wastewater facilities is included within the project, and have been evaluated throughout this EIR. For example, activities involved in the construction and installation of the septic onsite wastewater treatment systems and subsurface irrigation system would include excavation and backfilling that would occur as part of the overall project construction activities. As described above, construction activities would be required to comply with all County development standards, Project Design Features, and mitigation measures within this EIR, that would be verified by the County Building and Safety Department prior to permit approval, which would reduce impacts related to construction of wastewater facilities that are needed to serve the proposed project to a less than significant level.

Impact 3.16-3: Would the project 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 with Mitigation Incorporated. The proposed project would install a residential development in a presently undeveloped area, and thus would require the construction of new storm water drainage facilities. Runoff from the improved areas of the site would be conveyed as sheet flow to vegetated swales for conveyance to one of the project's infiltration basins, which would filter and slowly discharge runoff from the site.

Construction of these drainage facilities along with rest of the project would include excavation and backfilling that would expose bare soil to wind and rain, potentially resulting in top soil loss, soil erosion and sedimentation of surrounding water bodies. However, storm drainage facility construction would be part of the entire project that would be required to comply with the NPDES Construction General Permit included as Mitigation Measure MM 3.9-1 (See the discussion in Section 3.9, *Hydrology and Water Quality,* of this EIR for more details). In compliance with this permit, a SWPPP would be prepared and implemented; identifying BMPs that would minimize potential impacts related to construction of the storm drain system. Overall, with implementation of the construction requirements and mitigation measures within this EIR, which would be verified by the County Building and Safety Department prior to permit approval, impacts related to construction of drainage facilities that are needed to serve the proposed project would be less than significant.

Mitigation Measure

MM 3.9-1 *(Provided in Section 3.9, Hydrology and Water Quality under Impact 3.9-1)*

Impact 3.16-4: Would sufficient water supplies be available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?

Less than Significant Impact. The project includes development of 72 single-family residences, which would result in the addition of approximately 230 residents to the area (see Section 3.12, *Population and Housing* of this EIR, for more information about onsite population). As part of the project to provide water services for operation of the proposed project, 133.4 acres of land would be annexed in to the service area of EVMWD. Only developed portions of the project that would require potable water supplies would be annexed; and all non-irrigated areas would remain outside of the water service area. EVMWD is wholly within the boundaries of Western, which is wholly within the boundaries of MWD. Because of this arrangement, the project includes annexation into all water districts for service provision. Annexation into the boundaries of EVMWD, Western, and MWD in order to obtain water supply service is required for the project to be implemented, and is included as a Project Design Feature PDF-18.

Construction Water Supplies

As shown in **Table 2-4** in Chapter 2, *Project Description*, construction water usage would total 18.9 AF. Phase 1 (south parcel) would require approximately 3,608,700 gallons (11.1 AF) of water. Phase 2 (north parcel) would require approximately 2,549,550 gallons (7.8 AF) of water. Construction water would be provided by the existing wells on the project site. The Phase 1 (south parcel) currently contains a water well and cistern; and Phase 2 (north parcel) contains two active water wells and water storage tanks (one of them 8,000 gallons). These existing facilities would provide construction water supply throughout construction activities. Construction water usage of these wells would not affect any existing water supply entitlements; thus, water supply impacts related to needing expanded entitlements for construction activities would not occur.

Operational Water Supplies

Based on the average generation unit of 600 gpd per dwelling unit, operation of the proposed 72 single family units would generate a total water demand of approximately 43,200 gpd [25,800 gpd for Phase 1 (south parcel) and 17,400 for Phase 2 (north parcel), as shown in **Table 2-5**, Operational Water Demand. For both phases, irrigation of the vineyards would require an average of 68,897 gpd; irrigation of roadway and swale landscaping would require 101,821 gpd; and irrigation of fuel modification zones would require 122,210 gpd. Therefore, the total operational demand would be 336,128 gpd.

The project's maximum operational water demand of 336,128 gallons per day (or approximately 370 AFY) is within the potable water supply available by EVMWD (EVMWD, 2016). As described in the EVMWD Water Master Plan, the water demand in 2040 (shown in **Table 3.16-1**) would result in an average annual demand of 75.0 mgd, and a maximum day demand of 80.9 mgd. The Water Master Plan and UWMP describe that EVMWD will be able to meet the maximum day demand with future supplies of 88.89 mgd (EVMWD, 2016). These water demand projections are based on existing land use/zoning and regional growth projections for the service area.

Currently, the project site has a zoning designation of General Agricultural (A1), which allows residential development at a maximum density of four acres per dwelling unit), which would

result in 146 dwelling units on the project site at build out. Conversely, the proposed project would only develop 72 residential units, and the remainder of the project site would consist of preserved open space, landscaping, and fuel modification areas that would be developed. Therefore, the proposed project would result in fewer residential units than the build out allowable by the existing zoning criteria; and development of 72 single-family units on the project site would be within EVMWD's existing water demand projections. EVMWD would not need additional water entitlements to serve the proposed project, and the project would result in a less than significant impact on water supply.

Impact 3.16-5: Would the project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than Significant Impact. As described above, the closest Riverside County landfill is the El Sobrante Landfill, located 10 miles north of the project site in the City of Corona. The landfill is permitted to accept up to 16,054 tons of waste per day through 2044 (Calrecycle, 2016). In August 2016, the average daily amount of solid waste disposed at the landfill was 8,534 tons (Calrecycle September Inspection Report); thus, the landfill has an average daily additional capacity of 7,520 tons (CalRecycle, 2016).

The closest Orange County landfill is the Prima Deshecha Sanitary Landfill, located 11 miles southwest of the project site, which is permitted to accept 4,000 tons per day through 2067 (Calrecycle 2016). In September 2016, the maximum daily amount of solid waste disposed at the landfill was 2,075 tons; thus, the landfill has an average daily additional capacity of 1,925 tons (CalRecycle, 2016).

In addition, the Bowerman Sanitary landfill located 11002 Bee Canyon Access Road in Trabuco Canyon, is permitted to accept 11,500 tons per day of solid waste through 2053. In September 2016, the maximum daily amount of solid waste disposed at the landfill was 7,680 tons; thus, the landfill has an average daily additional capacity of 3,820 tons per day.

Calrecycle estimated residential disposal in California averages 2.49 pounds per day of solid waste per resident (http://www.calrecycle.ca.gov/LGCentral/Rates/Disposal/Resident.htm). The proposed project is estimated to generate a population increase of 230 people (see Section 3.12, *Population and Housing* of this EIR). Therefore, the residents of the proposed project would generate approximately 4,009 pounds (or 2 tons) of solid waste per week that can be accommodated by the El Sobrante landfill, Prima Deshecha Sanitary Landfill, or Bowerman Sanitary landfill. As a result, the proposed project would be served by a landfill that has sufficient permitted capacity to accommodate the project's solid waste disposal needs, and impacts would be less than significant.

Impact 3.16-6: Would the project comply with federal, state and local statutes and regulations related to solid waste?

No Impact. As discussed above, total solid waste generated by the proposed project would result in an increase of approximately 2 tons per week of solid waste. All solid waste-generating activities within the County are subject to the requirements set forth in AB 939, that requires diversion of a minimum of 50 percent of solid waste. In addition, after 2020 all development would be required to divert 75 percent of solid waste pursuant to state regulations. The proposed project and the commercial waste hauler that serves the project would be required to comply with these mandates regarding solid waste management, which are also implemented by the landfill facilities. Therefore, impacts related to compliance with regulations related to solid waste would not occur.

3.16.5 Cumulative Impacts

The service providers within County of Orange evaluate the projected population increases within the region to plan for increases in the demand for utilities and service systems. Therefore, the geographic area for cumulative effects to utility systems is the County as a whole. As described in Section 3.12, *Population and Housing*, the growth that would occur from implementation of the proposed project is within the adopted growth projections for the unincorporated area of the County. Thus, utility systems, such as EVMWD and planning for landfills, that would serve the project have anticipated the growth that would occur from implementation of the proposed project. As described above, the existing and planned water and landfill capacity would be able to accommodate the proposed project; thus, implementation of the proposed project would not result in a cumulatively considerable impact upon these service systems.

The drainage and wastewater infrastructure improvements included in the project are site-specific in nature and are designed to be self-contained and would not extend outside of the project area or utilize a service provider's infrastructure or capacity; thus, cumulative impacts related to wastewater and drainage infrastructure would not be cumulatively considerable and would be less than significant.

CHAPTER 4
Remaining Significant Impacts

Section 15126.2(b) of the *CEQA Guidelines* requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less than significant levels. Potential environmental effects of the proposed project and proposed mitigation measures are discussed in detail in Chapter 3 of this EIR.

Impacts in the following areas would remain significant and unavoidable, even with the incorporation of Project Design Features and feasible mitigation measures.

Aesthetics

The proposed project would result in significant impacts to scenic vistas available from the portions of Ortega Highway, which is an Eligible State Scenic Highway and is designated as a viewscape corridor by the Orange County General Plan. The project would affect views of the unique scenic resources and aesthetic vistas in the Santa Ana Mountains, which are considered by the General Plan Resources Element to possess outstanding scenic qualities. Thus, the project would result in a significant impact on scenic vistas from Ortega Highway. In addition, the proposed project would result in a significant impact related to the existing visual character of the site.

The proposed project would permanently alter the existing views from a largely undisturbed natural setting of hillsides, ridgelines, and native vegetation to a clustered residential development with views of housing and roadways within the natural setting of the area. Implementation of the following Project Design Features would reduce the visual impacts of the project:

- The provision of 414.6 acres or approximately 71 percent of the project site would preserve large areas of scenic vistas onsite, which are adjacent to the vistas within the Cleveland National Forest (PDF-1).
- Open space would be concentrated in the western and northern portions of the project site and the single-family residences would be clustered toward Long Canyon Road to create a buffer between the residential uses and the Cleveland National Forest lands, which would reduce impacts to scenic vistas by preservation of large areas of vistas (PDF-2).
- The project design will maintain similar topographic characteristics as the existing condition (PDF-3), which would retain the exiting character of the project site.
- Conceptual landscape plan has been designed to preserve open space areas, implement and oak tree planting plan, and provide landscaping that would screen views of the

residential buildings and help them blend into the native vegetation surrounding the project site (PDF-4 and PDF-5).

- The Tree Management Preservation Plan would provide for oak tree relocations to be within the project site, which would retain the exiting character of the site (PDF-5).
- Interior private streets have been designed to rural street standards (PDF-6).
- The project circulation is designed to be consistent with the County's Viewscape Typical Section including: an enlarged parkway, a hiking trail, and a lack of curbs (PDF-9).
- The water storage tanks will be visually screened with native/drought-tolerant landscaping and will be painted a neutral tone to blend with the surrounding environment (PDF-19).

In addition, Mitigation Measure MM 3.1-1 is included, which would require the use of earthen tones for exterior paint on the project's structures, and would reduce these impacts, but even with implementation of the Project Design Features and Mitigation Measure MM 3.1-1, the proposed project would still be visually prominent from Ortega Highway, and would result in a substantial change to the existing character of the rural area of native vegetation. Furthermore, the proposed structures would be incompatible with the scale and character of existing views of the undeveloped area and native vegetation. As a result, impacts related to scenic vistas and the existing visual character or quality of the site would be significant and unavoidable.

Noise

Construction activities associated with the proposed project would comply with the permitted construction hours established in the County's Municipal Code; however, project construction would generate a substantial temporary or periodic increase in ambient noise levels in the project vicinity and would expose nearby sensitive receptors to substantial increases in noise levels. Implementation of Project Design Feature PDF-21 that includes the following measures will be implemented to reduce construction-related noise:

- Construction activities will be limited to the hours between 7:00 a.m. to 5:00 p.m., Monday through Saturday, excluding federal holidays, which is consistent with the County's Noise Ordinance.
- During all excavation and grading on-site, the construction contractors will equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards to reduce construction equipment noise to the maximum extent practicable. The construction contractor will place all stationary construction equipment so that emitted noise is directed away from noise sensitive receptors.
- The construction contractor will stage equipment and material stockpiles in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors during project construction.

- The construction contractor will limit haul truck deliveries to the same hours specified for construction equipment.
- Electrically powered equipment to be used instead of pneumatic or internal combustion powered equipment, where feasible.
- Unnecessary idling of internal combustion engines (e.g., in excess of 5 minutes) will be prohibited.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only.

In addition, Mitigation Measures MM 3.11-1 through MM 3.11-3 would be implemented to provide temporary sound barriers between construction activities and the closest residences during construction activities that could exceed noise limits, provide noticing of the construction activity, and to establish a noise disturbance coordinator. However, it is anticipated that off-site sensitive receptors would still be exposed to a substantial temporary and periodic increase in ambient noise levels. Therefore, noise impacts related to construction would be significant and unavoidable.

CHAPTER 5
Alternatives

5.1 Introduction

This chapter addresses alternatives to the proposed project and describes the rationale for including them in the EIR. The chapter also discusses the environmental impacts associated with each alternative and compares the relative impacts of each alternative to those of the proposed project.

CEQA requires that an EIR compare the effects of a "reasonable range of alternatives" to the effects of a project. The alternatives selected for comparison should be those that would attain most of the basic project objectives and avoid or substantially lessen one or more significant effects of the project (*CEQA Guidelines* Section 15126.6). An EIR must consider a reasonable range of potentially feasible alternatives (*CEQA Guidelines* Section 15126.6(a)). The "range of alternatives" is governed by the "rule of reason," which requires the EIR to set forth only those alternatives necessary to permit an informed and reasoned choice by the lead agency and to foster meaningful public participation (*CEQA Guidelines* Section 15126.6(f)). CEQA generally defines "feasible" to mean an alternative that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors and other considerations (*CEQA Guidelines* Sections 15091(a)(3), 15364).

The alternatives addressed in this Draft EIR were selected in consideration of one or more of the following factors:

- The extent to which the alternative could avoid or substantially lessen any of the identified significant environmental effects of the proposed project;
- The extent to which the alternative could accomplish basic objectives of the proposed project;
- The potential feasibility of the alternative;
- The appropriateness of the alternative in contributing to a "range" of alternatives that would allow an informed comparison of relative advantages and disadvantages of the proposed project and potential alternatives to it; and
- The requirement of the *CEQA Guidelines* to consider a "no project" alternative; and to identify an "environmentally superior" alternative in addition to the no project alternative (Section 15126.6(e)).

5.2 Project Objectives

The proposed project is intended to provide for the development and maintenance of a single-family residential neighborhood in conjunction with limited vineyard uses. The following objectives have been established by the applicant to serve as a basis for comparing the alternatives, and for the evaluation of associated environmental impacts.

- To provide a residential community that is compatible with the surrounding residential and natural areas.
- To mitigate impacts to existing blue-line streams and California coastal live oaks.
- To ensure that current infrastructure and public services would not be lessened or burdened by project implementation but would be improved. This includes water capacity, fire safety, and storm-water runoff quality, and road safety.
- To ensure that lot coverage and density do not have impacts upon the site which cannot be mitigated in accordance with the County of Orange land use policies and development standards.
- To provide mitigation to the satisfaction of the County of Orange, California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service for any impacts to habitat or blue-line streams.
- To provide a residential community that incorporates a wildland fire-safe design that protects the proposed homes from potential wildland fires in accordance with the standards set forth by the Orange County Fire Authority.
- To provide a residential community that is uniquely different by integrating with and being sensitive to the environmental constraints of the existing terrain, geology, blue line streams, and the California live oak trees and that offers a large lot and remote lifestyle in a natural setting that is not commonly found within Orange County.

5.3 Alternatives Considered But Rejected

An EIR must briefly describe the rationale for selection and rejection of alternatives. The lead agency may make an initial determination as to which alternatives are potentially feasible and, therefore, merit in-depth consideration, and which are infeasible and need not be considered further. Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, need not be considered (*CEQA Guidelines* Section 15126.6(f), (f)(3)). This section identifies alternatives considered by the lead agency, but rejected as infeasible and provides a brief explanation of the reasons for their exclusion. As noted above, alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid any significant environmental effects.

An alternative to sell the project site for conservation purposes was considered but not evaluated because it would not meet any of the project objectives. In addition, impacts from this type of

alternative would likely be similar to those discussed by Alternative 1, No Project/No Build Alternative.

An alternative site was considered and also eliminated from further consideration. CEQA specifies that the key question regarding alternative site consideration is "whether any of the significant effects of the project would be avoided or substantially lessened by putting the project at another location." In addition, an alternative site need not be considered when implementation is "remote and speculative," such as when the alternative site is beyond the control of a project applicant. For this project, there are no suitable alternative sites within the control of the project applicant. In the event land could be purchased of suitable size and developmental characteristics, based on the known general conditions in the project area, an alternative site would likely have similar impacts after mitigation as the project. Given the size and nature of the proposed project and the project objectives, it would be impractical and infeasible to propose the project on an alternate site in the area with fewer environmental impacts.

5.4 Alternatives Selected for Further Analysis

Three alternatives to the proposed project have been identified for further analysis as representing a reasonable range of alternatives that attain most of the objectives of the project, may avoid or substantially lessen any of the significant effects of the proposed project, and are feasible from a development perspective. These alternatives have been developed based on the criteria identified in Section 5.1.

The following alternatives are analyzed in detail below:

- **Alternative 1 – No Project/No Build Alternative:** Under this alternative, no development would occur on the project site, and it would remain in its current condition.
- **Alternative 2 – Decreased Density Single Phase:** Under this alternative, a reduction in the number of residential units would occur by not developing Phase 1 (south parcel). Phase 2 (north parcel) would be developed with 29 residential units, as planned by the proposed project, and the Phase 1 (south parcel) would remain as open space. This alternative would decrease the number of residential units developed in the project area by 43 units, or approximately 60 percent.
- **Alternative 3 – Decreased Density Both Phases**. under this alternative, a 50 percent reduction in the number of residential units would be built in each phase. Thus, 22 single-family residences would be developed in Phase 1 (south parcel) and 14 single-family residences would be developed in Phase 2 (north parcel). This alternative would decrease the number of residential units developed in the project area by 36 units, and provide a larger area of open space on each parcel.

Descriptions of each alternative and its associated impacts are provided below. **Table 5-1** (located at the end of this chapter) provides a side-by-side comparison of the potential impacts of the alternatives to the impacts of the proposed project. **Table 5-2** (also located at the end of this chapter) provides a summary of each alternative's ability to meet the proposed project objectives.

Alternative 1: No Project/No Build

Section 15126.6(e) of the *CEQA Guidelines* requires analysis of the No Project Alternative. The no project alternative analysis must discuss the existing conditions at the time the Notice of Preparations (2006 and 2013) were published and consider conditions that would be reasonably expected to occur in the foreseeable future if the project were not approved based on current plans and consistent with available infrastructure and community services. The No Project Alternative (Alternative 1) applies to the following scenarios:

(1) When the project is a revision of an existing land use or regulatory plan, policy, or ongoing operation, the "no project" alternative is the continuation of the existing plan, policy, or operation into the future; or

(2) If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed.

As the project is a development project on identified property, the no project alternative means "no build" wherein the existing environmental setting is maintained and no development occurs. The project site has an Orange County General Plan Land Use designation as “Open Space” (OS), and is zoned as “General Agriculture” (A1). Under Alternative 1, the proposed project would not be developed and the project site would continue in its current state as a generally undeveloped and densely vegetated area within the Santa Ana Mountains.

Environmental Impacts

Aesthetics

The proposed project would substantially alter views of the project site from largely undisturbed settings to residential uses. The project would be incompatible with the scale and character of existing views of the undeveloped area and native vegetation. Even after implementation of project design features and mitigation measures, impacts from viewpoints nearby roadways would remain significant and unavoidable. The No Project Alternative would avoid impacts on aesthetic resources by maintaining the existing generally undeveloped open space character of the entire project site and existing scenic views from Ortega Highway would not be impacted. The No Project Alternative would also not introduce new sources of nighttime light and glare to the project site. Therefore, the No Project Alternative would result in fewer impacts associated with aesthetic resources than the proposed project.

Air Quality

The proposed project would result in short-term construction-related emissions and long-term operational emissions that would be less than significant. Under the No Project Alternative, construction would not be required and additional vehicular trips from the project area would not occur. The No Project Alternative would avoid an increase in regional and localized emissions. The proposed project impacts to air quality are less than significant; however, the No Project Alternative would result in no impacts to air quality.

Biological Resources

The proposed project would have an adverse effect on biological resources and mitigation measures would be required to reduce impacts from the proposed project to a less than significant level. Construction of the proposed project would result in direct removal of wildlife habitat and impacts to special status plant and wildlife species and jurisdictional features on the project site. Project impacts to special status plant and wildlife species and jurisdictional features would be less than significant with implementation of Project Design Features, and mitigation measures. The No Project Alternative would avoid all potential impacts related to biological resources that could occur by the proposed project. The No Project Alternative would not impact wildlife habitat, special status plant and wildlife species, or jurisdictional features. In addition, this alternative avoids conflicts with County's management guidelines outlined in Public Resources Code Section 21083.4 (Senate Bill 1334, as adopted) or the Riverside County Multiple Species Habitat Conservation Plan. Therefore, the No Project Alternative would result in no impact on biological resources, which is less than to the proposed project's less than significance after mitigation.

Cultural Resources

The proposed project would result in excavation and grading and therefore, it could potentially affect unidentified archaeological or paleontological resources or result in the accidental discovery of human remains. Because the No Project Alternative would not disturb the ground, the No Project Alternative would not result in impacts related to cultural resources, which is less than the project's less than significance after mitigation.

Geology and Soils

Implementation of Project Design Features, mitigation measures, and adherence to standard building code requirements along with the proposed project would reduce potential geologic and soils impacts to less than significant. However, the No Project Alternative would avoid placement of people and structures on the project site, which would avoid potential impacts to geology and soils. Although impacts to geology and soils for the proposed project are less than significant, the No Project Alternative would result in no impacts, and would avoid risk of impacts, in comparison to the proposed project.

Greenhouse Gas Emissions

The proposed project would result in short-term construction-related emissions and long-term operational emissions. Under the No Project Alternative, the project site would not be developed and no GHG emissions would be generated. The No Project Alternative would avoid an increase in GHG emissions generated and would not affect the ability for the project site to meet the state's GHG goals. Even though the proposed project impacts to greenhouse gases are less than significant, the No Project Alternative would not result in GHG impacts.

Hazards and Hazardous Materials

The proposed project could involve the use of hazardous materials, and result in the generation of hazardous waste from short-term construction activities (e.g., used oil, concrete waste, etc.). In

addition, operations could result in the use and transport of hazardous materials (e.g., cleaning products, fertilizers, small equipment maintenance). Unlike the No Project Alternative, the proposed project would expose additional population or structures into an area that is at risk for wildfires. The No Project Alternative does not increase risks from hazards or hazardous materials. Even though impacts form the proposed project are less than significant, the No Project Alternative would not involve any impacts related to hazards and hazardous materials.

Hydrology and Water Quality

The proposed project could result in a loss of topsoil and a change in drainage patterns, as the project site would require grading and structural development. Additionally, the proposed project would require onsite wastewater treatment systems. Although impacts to hydrology and water quality for the proposed project are less than significant with implementation of the Project Design Features and mitigation measures, the No Project Alternative would avoid impacts related to loss of topsoil, a change in drainage patterns, or onsite wastewater systems. Therefore, the No Project Alternative would not result in any impacts to hydrology and water quality.

Land Use and Planning

The project site has an Orange County General Plan Land Use designation as "Open Space" (OS), and is zoned as "General Agriculture" (A1). The project proposes to change the General Plan Land Use of designation to Rural Residential (1A), which allows a minimum density of 0.25 to 0.5 dwelling units per acre, (or two to four units per acre); and the zoning designation to Residential Agricultural (AR), which allows single-family residential in conjunction with agricultural uses and requires a minimum residential lot size of 7,200 square feet. The majority of the project site is undisturbed and supports dense chaparral habitat and oak trees, and implementation of the proposed project would result in development of single-family homes, vineyards, and associated uses. The No Project Alternative would not result in development, and would not require a General Plan Amendment or zoning change. In addition, the No Project Alternative would not potentially conflict with applicable habitat conservation plans, such as the Riverside County MSHCP. Although land use impacts are less than significant, the No Project Alternative would not result in any land use impacts, which would be less than the proposed project.

Noise

The proposed project would result a short-term increase in noise from construction and a long-term increase in noise from operation. The short-term noise impacts would be significant and unavoidable after implementation of Project Design Features, and mitigation measures. The No Project Alternative would not include any new noise sources at the project site, and, therefore, would not generate any impacts. In addition, the No Project Alternative would not result in groundborne vibration. As a result, the No Project Alternative would avoid the significant construction impacts that would result from the proposed project.

Population and Housing

The No Project Alternative would not develop 72 residential units and the associated 230 new residents in the project area. Thus, the No Project Alternative would not induce population

growth in the area, either directly (by development of the new homes) or indirectly (by the need for employees). Even though population and housing impacts for the proposed project are less than significant, the No Project Alternative would not result in any impacts to population and housing.

Public Services

The demand for public services, such as fire protection, police protection, schools, libraries and hospitals, would incrementally increase with implementation of the proposed project. Project development would not create a need for expanding existing fire or police facilities or staff, construction of a new facility, or adversely impact types of services provided. The proposed project would generate additional students and would increase the demand on library services. However, the proposed project's impacts associated with increased demand on public services would be less than significant and the project would be required to pay development fees, as detailed within Section 3.13, *Public Services*.

The No Project Alternative would not result in any housing on the project site, this alternative would not increase demand on existing fire protection, police protection, schools, or libraries. Therefore, the No Project Alternative would not result in any impacts to public services; and impacts from the proposed project would be greater.

Recreation

The proposed project would add approximately 230 new residents to the site. Because of the proximity of the project site to existing recreational resources, including active recreation opportunities, sufficient park and recreation opportunities are available to meet the demands of the additional residents, and impacts would be less than significant.

However, the No Project Alternative would not result in an increased population and, thus, would not increase the use of existing park and recreation facilities. Even though potential impacts from the proposed project are less than significant, the No Project Alternative would not result in any impacts to recreational facilities.

Transportation and Traffic

The proposed project would be developed on a vacant site that does not currently generate traffic, so all project-generated trips would be new trips to area roads. The proposed project would increase traffic in the area from construction worker trips and project operations that would increase traffic on area intersections. The proposed would generate approximately 690 daily operational trips. However, with implementation of Project Design Features and mitigation measures, impacts to area roadways would be less than significant.

The No Project Alternative would not increase traffic loads on area streets, therefore no impacts would occur. Thus, the No Project Alternative would result in fewer impacts related to transportation and traffic than the proposed project.

Utilities and Service Systems

The proposed project would develop 72 single-family homes that would require water supply and would generate wastewater and solid waste. Impacts to utilities and service systems would be less than significant with implementation of Project Design Features. The proposed project would increase the demand for water services, wastewater services, and solid waste services compared to the No Project Alternative. Because the No Project Alternative would not involve development, the alternative would not result in any impacts on utilities and service systems.

Conclusion

The No Project Alternative would result in the continuation of existing conditions at the project site, and development and operation of 72 single-family residences would not occur. As a result, the No Project Alternative would avoid the significant and unavoidable aesthetic resource and construction noise impacts that would result from the proposed project. In addition, the No Project Alternative would not require implementation of the mitigation measures that are identified in Section 3.0 of this EIR. Furthermore, the No Project Alternative would not result in any of the impacts that were identified to be less than significant from the proposed project.

While the No Project Alternative would have fewer environmental impacts compared to the proposed project, this alternative would not meet several of the objectives listed in Section 5.2, *Project Objectives*. Specifically, the No Project Alternative would not provide any residences, which is the basic project objective. In addition, the No Project Alternative would not provide a residential community that is compatible with the surrounding residential and natural areas; provide a residential community that incorporates a fire-safe design; or provide a residential community that is uniquely different and that offers a lifestyle that is not commonly found in Orange County.

Alternative 2: Decreased Density Single Phase

Alternative 2, the Decreased Density Single Phase Alternative, is a variation of the proposed project that provides for residential development and excludes the development of the Phase 1 (south parcel) project site, which would remain as open space. Under this alternative, the number of residential units would be reduced by 43 units (60 percent of the proposed project) to 29 residential units.

Environmental Impacts

Aesthetics

The Decreased Density Single Phase Alternative would retain the existing views of the Phase 1 (south parcel), but would result in similar impacts associated with views from a scenic corridor. The proposed single-family residences would be visible from Ortega Highway (an Eligible State Scenic highway – not designated) from several viewpoints. Although development of this alternative would result in fewer residential units being visible from Ortega Highway, it would still alter the views from an Eligible State Scenic highway. Therefore, the Decreased Density Single Phase Alternative would result in fewer impacts related to aesthetic resources compared to the proposed project. However, under the Decreased Density Single Phase Alternative impacts to

scenic views and visual character would remain significant and unavoidable after implementation of the same Project Design Features and Mitigation Measures that would be implemented by the proposed project.

Air Quality

Construction activities resulting under the Decreased Density Single Phase Alternative would be reduced when compared to the proposed project because construction of fewer units and grading of less acreage would occur. However, short-term construction-related emissions of NOx, PM_{10} and $PM_{2.5}$ would still occur, although the generation of these emissions would be less under this alternative than those which would occur under the proposed project. Long-term operational air quality impacts under the proposed project are largely related to vehicular emissions. Because the traffic generated under this alternative would be less than the proposed project, operational air quality emissions (and impacts) generated under this alternative would be reduced. Therefore, the Decreased Density Single Phase Alternative would result in fewer air quality impacts than compared to the proposed project. Air quality impacts related to both the project and the Decreased Density Single Phase Alternative would be less than significant.

Biological Resources

Development of the Decreased Density Single Phase Alternative would result in similar but fewer impacts to biological resources as the proposed project. The Decreased Density Single Phase Alternative excludes the development of Phase 1 (south parcel), which would remain as open space. As such, the Decreased Density Single Phase Alternative would avoid biological impacts to habitat and potential sensitive status species in the Phase 1 (south parcel) area. In addition, the disturbance area within the Riverside County MSHCP would not occur from this alternative. Thus, potential impacts related to the MSHCP would not occur.

The Decreased Density Single Phase Alternative would develop the proposed residential uses in the Phase 2 (north parcel); thus, this alternative could affect sensitive habitat and species, and nesting birds protected by the MBTA (if construction occurs during the breeding season). However, because development under this alternative would occur within a smaller footprint than under the proposed project, and this alternative would implement all of the Project Design Features and mitigation measures as the proposed project, the Decreased Density Single Phase Alternative would result in fewer impacts related to biological resources compared to the proposed project.

Cultural Resources

The Decreased Density Single Phase Alternative would result in fewer but similar impacts related to cultural resources because it would involve excavation and grading activities that could disturb unknown or unidentified archaeological or paleontological resources or human remains. The Decreased Density Single Phase Alternative excludes the development of Phase 1 (south parcel), which would remain as open space. As such, the Decreased Density Single Phase Alternative would not impact cultural resources that could exists in the Phase 1 (south parcel) area. The overall area to be graded would be less under this alternative than under the proposed project;

therefore, impacts associated with cultural resources would be less under the Decreased Density Single Phase Alternative.

Geology and Soils

Like the proposed project, the Decreased Density Single Phase Alternative would include earthwork that could result in the loss of top soil and there is a potential for damage caused by ground shaking, landslide, or collapse. However, because this alternative would not include as many residential units, it would expose fewer people and structures to the potential impacts associated with ground shaking, landslide, or collapse. As a result, the Decreased Density Single Phase Alternative would result in fewer impacts than the proposed project.

Greenhouse Gas Emissions

The proposed project would generate GHG emissions from construction and operational activities. Under the Decreased Density Single Phase Alternative, the amount of construction would be reduced and the number of residential units and related vehicular trips would be less. As such, construction and operational related GHG emissions are anticipated to be less than the proposed project. The Decreased Density Single Phase Alternative would result in reduced less than significant GHG emission impacts compared to the proposed project.

Hazards and Hazardous Materials

Like the proposed project, the Decreased Density Single Phase Alternative would involve the use of hazardous materials during construction and operational activities. In addition, this alternative would require similar fuel modification zones around the Phase 2 (north parcel area) to reduce the risk of wildfires to the occupants. Therefore, the Decreased Density Single Phase Alternative would result in similar impacts associated with hazards and hazardous materials as the proposed project but would expose fewer people and structures to the potential risks.

Hydrology and Water Quality

The Decreased Density Single Phase Alternative would result in a disturbance to and potential loss of topsoil at the project site due to construction activities. However, because this alternative would include fewer residential units, a smaller area would need to be graded and, thus, a smaller area of exposed topsoil would occur, which would reduce potential impacts to water quality associated with erosion and sedimentation. Like the proposed project, drainage patterns would be altered, impervious areas on-site would increase; however, the overall areas to be disturbed would be less and the construction activities would be required to adhere to the same construction related regulations that would reduce potential impacts to a less than significant level. Therefore, this alternative would result in fewer potential impacts, due to the smaller area required for construction and operation.

Land Use and Planning

The Decreased Density Single Phase Alternative would require the same General Plan Amendments and zoning changes for Phase 2 (north parcel) that would occur under the proposed project. However, the General Plan Amendments and zoning changes proposed by the project for the Phase 1 (south parcel) area would not occur. This alternative would result in fewer areas to be

developed and a larger area of open space land. Although land use impacts for the Decreased Density Single Phase Alternative would be less, as fewer acres would be developed, impacts are similar to the less than significant impacts that would result from the proposed project.

Noise

Like the proposed project, the Decreased Density Single Phase Alternative would result in short-term construction-related and long-term operational noise impacts. The Decreased Density Single Phase Alternative excludes the development of the Phase 1 (south parcel) project site, which would remain as open space. As such, the Decreased Density Single Phase Alternative would avoid the significant construction noise impacts to sensitive receptors near the Phase 1 (south parcel) site and reduce overall construction noise compared to the proposed project because this alternative would result in fewer construction activities, over a shorter period of time, and would impact fewer sensitive receptors than the proposed project. However, significant construction noise impacts would still occur after implementation of Project Design Features and mitigation measures with the development of Phase 2 (north parcel) due to the location of existing sensitive receptors.

In addition, operational impacts of this alternative are largely associated with traffic noise, and would be decreased due to the smaller amount of traffic generated under this alternative. Therefore, the Decreased Density Single Phase Alternative would result in fewer less than significant operational noise impacts than the proposed project.

Population and Housing

The Decreased Density Single Phase Alternative would develop fewer new housing units than the proposed project and result in fewer new residents at the project site. Assuming an average household size of 3.2, the addition of 29 single-family residential units would result in approximately 93 new residents versus 230 new residents generated by the proposed project. Therefore, the total population on the project site under this alternative would be less than the proposed project. The Decrease Density Single Phase Alternative would result in fewer less than significant impacts to population and housing compared to the proposed project.

Public Services

The Decreased Density Single Phase Alternative would require incrementally additional public services such as police, fire protection, schools, and other public facilities such as libraries. However, due to the reduced population that would occur under this alternative, compared to the proposed project, the demand for public services would be incrementally less. Therefore, the Decreased Density Single Phase Alternative would result in fewer less than significant impacts related to public services compared to the proposed project.

Recreation

The Decreased Density Single Phase Alternative would increase the population at the project site by approximately 93 residents, which would increase the demand on the recreational facilities in the vicinity of the project site. The population under this alternative would be smaller than what would be generated by the proposed project and the demand for recreation facilities would be

reduced in comparison to the proposed project. Therefore, the Decreased Density Single Phase Alternative would result in fewer less than significant impacts to recreational facilities than the proposed project.

Transportation and Traffic

The proposed project would be developed on a generally vacant site that does not generate traffic and would increase traffic on area roadways and intersections from construction and operational trips. The Decreased Density Single Phase Alternative would result in less construction traffic than the proposed project because it would include the construction of 60 percent fewer residential units.

The operational trips related to the 29 residential units developed by the Decreased Density Single Phase Alternative would be substantially less (approximately 60 percent less) than the trips generated by the 72 units proposed the proposed project. As described in Section 3.15, *Transportation and Traffic*, the proposed project would generate approximately 690 vehicular trips per day; a 60 percent reduction would result in approximately 276 vehicular trips per day that would be generated by this alternative. Thus, the Decreased Density Single Phase Alternative would result in fewer impacts related to transportation and traffic than compared to the proposed project. However, both the project and the Decreased Density Single Phase Alternative would result in less than significant impacts after implementation of Project Design Features.

Utilities and Service Systems

As under the proposed project, water pipelines and solid waste services would need to be extended to the project site under the Decreased Density Single Phase Alternative. In addition, the development of onsite wastewater treatment systems would be required under this alternative. Construction impacts associated with the extension of these utilities under this alternative would be similar to those under the proposed project. However, because this alternative would include fewer residential units, demand on all utility and service system facilities would be decreased. Overall, the Decreased Density Single Phase Alternative would result in fewer less than significant impacts on utilities and service systems than the proposed project.

Conclusion

The Decreased Density Single Phase Alternative would result in the development of 29 single-family units and associated infrastructure improvements within Phase 2 (north parcel). The potential impacts from this alternative are less than the proposed project because a smaller land area and number of single-family residential units would be developed. This alternative would not result in any impacts that would be greater than those identified for the proposed project. However, this alternative would not reduce significant unavoidable aesthetic and construction noise impacts to a less than significant level. As described above, impacts related to scenic views, visual character, and construction noise would remain significant and unavoidable under this alternative after implementation of Project Design Features and mitigation measures.

In addition, as shown in **Table 5-2**, this alternative would also not meet the project objectives to the same extent as the proposed project. Specifically, the Decreased Density Single Phase Alternative would provide a much smaller residential community that would provide fewer

residences to meet the market demand that are compatible with surrounding areas and fewer opportunities at a remote lifestyle that is not commonly found in Orange County.

Alternative 3: Decreased Density Both Phases

Alternative 3, the Decreased Density Both Phases Alternative would provide for reduced residential development in both phases. A 50 percent reduction in the number of residential units would be built in each phase. Thus, 22 single-family residences would be developed in Phase 1 (south parcel) and 14 single-family residences would be developed in Phase 2 (north parcel). This alternative would decrease the number of residential units developed in the project area by 36 units, and provide a larger area of open space on each parcel. The residential units developed under this alternative would occur within the same general development area as the proposed project; however, the areas closest to Ortega Highway and the existing offsite sensitive receptors would not be developed, and the proposed residences would be setback farther from Ortega Highway and existing offsite residences.

Environmental Impacts

Aesthetics

The Decreased Density Both Phases Alternative would retain the existing views of the project site from the scenic corridor. The proposed single-family residences would be setback from Ortega Highway, such that residences would not be visible from Ortega Highway (an Eligible State Scenic highway – not designated). Thus, this alternative would not alter the views from an eligible scenic highway. Therefore, the Decreased Density Both Phases Alternative would not result in impacts related to aesthetic resources. The significant and unavoidable impacts related to scenic views and visual character that would occur after implementation of Project Design Features and mitigation measures from the proposed project, would not occur by the Decreased Density Both Phases Alternative.

Air Quality

Construction activities resulting under the Decreased Density Both Phases Alternative would be reduced when compared to the proposed project because construction of fewer units and grading of less acreage would occur. However, short-term construction-related emissions of NOx, PM_{10} and $PM_{2.5}$ would still occur, although the generation of these emissions would be less under this alternative than those which would occur under the proposed project. Long-term operational air quality impacts are largely related to vehicular emissions. Because the traffic generated under this alternative would be less than the proposed project, operational air quality emissions (and impacts) generated under this alternative would be reduced. Therefore, the Decreased Density Both Phases Alternative would result in fewer air quality impacts than compared to the proposed project. Air quality impacts related to both the project and the Decreased Density Both Phases Alternative would be less than significant.

Biological Resources

Development of the Decreased Density Both Phases Alternative would result in similar but fewer impacts to biological resources as the proposed project. The Decreased Density Both Phases

Alternative would develop fewer residences and provide a larger area of open space on the project site, which includes habitat areas that may contain sensitive species. As such, the Decreased Density Both Phases Alternative would reduce biological impacts to habitat areas and potential impacts sensitive status species on the project site. In addition, the disturbance area within the Riverside County MSHCP would be less from implementation this alternative. Although a portion of the roadway for Phase 1 (south parcel) that crosses into Riverside County would still occur, potential impacts related to the MSHCP would be less than the proposed project.

Overall, the Decreased Density Both Phases Alternative would develop less than the proposed project, and would implement all of the Project Design Features and mitigation measures as the proposed project. Therefore, the Decreased Density Both Phases Alternative would result in fewer impacts to biological resources compared to the proposed project.

Cultural Resources

The Decreased Density Both Phases Alternative would result in fewer but similar impacts related to cultural resources because it would involve excavation and grading activities that could disturb unknown or unidentified archaeological or paleontological resources or human remains. The Decreased Density Both Phases Alternative would reduce the development areas and increase the onsite open space. As such, the Decreased Density Both Phases Alternative would have a reduced potential to impact cultural resources. The overall area to be graded would be less under this alternative than under the proposed project; therefore, impacts associated with cultural resources would be less under the Decreased Density Both Phases Alternative.

Geology and Soils

Like the proposed project, the Decreased Density Both Phases Alternative would include earthwork that could result in the loss of top soil and there is a potential for damage caused by ground shaking, landslide, or collapse. However, because this alternative would not include as many residential units, it would expose fewer people and structures to the potential impacts associated with ground shaking, landslide, or collapse. As a result, the Decreased Density Both Phases Alternative would result in fewer impacts than the proposed project.

Greenhouse Gas Emissions

The proposed project would generate GHG emissions from construction and operational activities. Under the Decreased Density Both Phases Alternative, the amount of construction would be reduced and the number of residential units and related vehicular trips would be less. As such, construction and operational related GHG emissions are anticipated to be less than the proposed project. The Decreased Density Both Phases Alternative would result in reduced less than significant GHG emission impacts compared to the proposed project.

Hazards and Hazardous Materials

Like the proposed project, the Decreased Density Both Phases Alternative would involve the use of hazardous materials during construction and operational activities. In addition, this alternative would require similar fuel modification zones around the development areas to reduce the risk of

wildfires to the residential structures and residents. Therefore, the Decreased Density Both Phases Alternative would result in similar impacts associated with hazards and hazardous materials as the proposed project, but would expose fewer people and structures to the potential risks.

Hydrology and Water Quality

The Decreased Density Both Phases Alternative would result in a disturbance to and potential loss of topsoil at the project site due to construction activities. However, because this alternative would include fewer residential units, a smaller area would need to be graded and, thus, a smaller area of exposed topsoil would occur, which would reduce potential impacts to water quality associated with erosion and sedimentation. Like the proposed project, drainage patterns would be altered, impervious areas on-site would increase; however, the overall areas to be disturbed would be less and the construction activities would be required to adhere to the same construction related regulations that would reduce potential impacts to a less than significant level. Therefore, this alternative would result in fewer potential impacts, due to the smaller area required for construction and operation.

Land Use and Planning

The Decreased Density Both Phases Alternative would require the same General Plan Amendments and zoning changes that would occur under the proposed project. However, this alternative would result in fewer areas to be developed and a larger area of open space land. Although land use impacts for the Decreased Density Both Phases Alternative would be less, as fewer acres would be developed, impacts are similar to the less than significant impacts that would result from the proposed project.

Noise

Like the proposed project, the Decreased Density Both Phases Alternative would result in short-term construction-related and long-term operational noise impacts. The Decreased Density Both Phases Alternative excludes development of residences near offsite sensitive receptors. The new residences would be setback a minimum of 2,300 feet from the existing offsite residences. As such, the Decreased Density Both Phases Alternative would avoid the significant construction noise impacts to sensitive receptors. In addition, overall construction noise would be reduced compared to the proposed project because this alternative would result in fewer construction activities, over a shorter period of time. Thus, this alternative would avoid the significant and unavoidable short-term and periodic construction noise impact that would occur from the proposed project.

In addition, operational impacts of this alternative are largely associated with traffic noise, and would be decreased due to the smaller amount of traffic generated under this alternative. Therefore, the Decreased Density Both Phases Alternative would result in fewer less than significant operational noise impacts than the proposed project.

Population and Housing

The Decreased Density Both Phases Alternative would develop fewer new housing units than the proposed project and result in fewer new residents at the project site. Assuming an average

household size of 3.2, the addition of 36 single-family residential units would result in approximately 115 new residents versus 230 new residents generated by the proposed project. Therefore, the total population on the project site under this alternative would be less than the proposed project. The Decrease Density Both Phases Alternative would result in fewer less than significant impacts to population and housing compared to the proposed project.

Public Services

The Decreased Density Both Phases Alternative would require incrementally additional public services such as police, fire protection, schools, and other public facilities such as libraries. However, due to the reduced population that would occur under this alternative, compared to the proposed project, the demand for public services would be incrementally less than what would be required for the proposed project. Therefore, the Decreased Density Both Phases Alternative would result in fewer less than significant impacts related to public services compared to the proposed project.

Recreation

The Decreased Density Both Phases Alternative would increase the population at the project site by approximately 115 residents, which would increase the demand on the recreational facilities in the vicinity of the project site. The population under this alternative would be 50 percent less than what would be generated by the proposed project and the demand for recreation facilities would be reduced in comparison to the proposed project. Therefore, the Decreased Density Both Phases Alternative would result in fewer less than significant impacts to recreational facilities than the proposed project.

Transportation and Circulation

The proposed project would be developed on a generally vacant site that does not generate traffic and would increase traffic on area roadways and intersections from construction and operational trips. The Decreased Density Both Phases Alternative would result in less construction traffic than the proposed project because it would include the construction of 50 percent fewer residential units.

The operational trips related to the 36 residential units developed by the Decreased Density Both Phases Alternative would be substantially less (approximately 50 percent less) than the trips generated by the 72 units proposed the proposed project. As described in Section 3.15, *Transportation and Traffic*, the proposed project would generate approximately 690 vehicular trips per day; a 50 percent reduction would result in approximately 345 vehicular trips per day that would be generated by this alternative. Thus, the Decreased Density Both Phases Alternative would result in fewer impacts related to transportation and traffic than compared to the proposed project. However, both the project and the Decreased Density Both Phases Alternative would result in less than significant impacts after implementation of Project Design Features.

Utilities and Service Systems

As under the proposed project, water pipelines and solid waste services would need to be extended to the project site under the Decreased Density Both Phases Alternative. In addition, the

development of onsite wastewater treatment systems would be required under this alternative. Construction impacts associated with the extension of these utilities under this alternative would be similar to those under the proposed project. However, because this alternative would include fewer residential units, demand on all utility and service system facilities would be decreased. Overall, the Decreased Density Both Phases Alternative would result in fewer less than significant impacts on utilities and service systems than the proposed project.

Conclusion

The Decreased Density Both Phases Alternative would result in the development of 36 single-family units and associated infrastructure improvements throughout both phases of the project site. The potential impacts from this alternative are less than the proposed project because a smaller area and number of single-family residential units would be developed. This alternative would not result in any impacts that would be greater than those identified for the proposed project. In addition, this alternative would reduce significant unavoidable aesthetic and construction noise impacts to a less than significant level. As described above, impacts related to scenic views, visual character, and construction noise would not occur under this alternative.

However, as shown in **Table 5-2**, this alternative would not meet the project objectives to the same extent as the proposed project. Specifically, the Decreased Density Both Phases Alternative would provide a much smaller residential community that would provide fewer residences to meet the market demand and fewer opportunities at a remote lifestyle that is not commonly found in Orange County.

5.5 Environmentally Superior Alternative

The Environmentally Superior Alternative for the proposed project would be Alternative 1, or the No Project/No Build Alternative. No substantially significant and long-term impacts would occur to the environment as a result of this No Project/No Build alternative. However, *CEQA Guidelines* Section 15126.6(3)(1) states:

> *The "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives* [Underline added.]

The Environmentally Superior Alternative among the other alternatives is Alternative 3 – the Decreased Density Both Phases Alternative, which would develop 36 single-family units and associated infrastructure improvements throughout the project site. The potential impacts from this alternative are less than the proposed project because a smaller area would be developed and less single-family residential units would be developed. In addition, this alternative would reduce significant unavoidable aesthetic and construction noise impacts to a less than significant level. As described above, impacts related to scenic views, visual character, and construction noise

would not occur under this alternative. As a result, overall impacts from implementation of this alternative would be less than those of the proposed project.

However, this alternative would not meet some of the project objectives to the same extent as the proposed project. The Decreased Density Both Phases Alternative would provide a much smaller residential community that would provide fewer residences to meet the market demand and fewer opportunities at a remote lifestyle that is not commonly found in Orange County. CEQA does not require the lead agency (County of Orange) to choose the environmentally superior alternative. Instead CEQA requires the County to consider environmentally superior alternatives, weigh those considerations against the environmental impacts of the proposed project, and make findings that the benefits of those considerations outweigh the harm.

TABLE 5-1
IMPACT SUMMARY/COMPARISON OF ALTERNATIVES

Environmental Issue	Proposed Project	Alternative 1: No Project/ No Build	Alternative 2: Decreased Density Single Phase	Alternative 3: Decreased Density Both Phases
Aesthetics	Significant and Unavoidable	-	-	-
Air Quality – Construction	Less than Significant	-	-	-
Operations	Less than Significant	-	-	-
Biological Resources	Less than Significant	-	-	-
Cultural Resources	Less than Significant	-	-	-
Geology and Soils	Less than Significant	-	-	-
Greenhouse Gas Emissions	Less than Significant	-	-	-
Hazards and Hazardous Materials	Less than Significant	-	-	-
Hydrology and Water Quality	Less than Significant	-	-	-
Land Use and Planning	Less than Significant	-	=	=
Noise – Construction	Significant and Unavoidable	-	-	-
Operations	Less than Significant	-	-	-
Population and Housing	Less than Significant	-	-	-
Public Services – Fire Protection	Less than Significant	-	-	-
Sheriff	Less than Significant	-	-	-
Schools	Less than Significant	-	-	-
Hospitals	Less than Significant	-	-	-
Recreation	Less than Significant	-	-	-
Transportation and Circulation	Less than Significant	-	-	-
Utility and Service Systems	Less than Significant	-	-	-

NOTES: (-) The alternative would result in less impacts that the proposed project.
(+) The alternative would result in greater impacts that the proposed project.
(=) The alternative would result in same/similar impacts as the proposed project.

TABLE 5-2
ABILITY TO MEET OBJECTIVES

Objectives	Proposed Project	Alternative 1: No Project/ No Build	Alternative 2: Decreased Density Single Phase	Alternative 3: Decreased Density Both Phases
1. To provide a residential community that is compatible with the surrounding residential and natural areas.	Yes	No	Yes	Yes
2. To minimize impacts to existing blue-line streams and California Coastal Live Oaks.	Yes	Yes	Yes	Yes
3. To ensure that lot coverage and density do not have impacts upon the site which cannot be mitigated in accordance with the County of Orange.	Yes	Yes	Yes	Yes
4. To provide mitigation to the satisfaction of the County of Orange, California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service for any damage done to existing habitat or blue-line streams.	Yes	No	Yes	Yes
5. To provide a residential community that incorporates a fire-safe design that protects the proposed homes from future wildland fires in accordance with the standards set forth by the Orange County Fire Authority.	Yes	No	Yes	Yes
6. To provide a residential community that is uniquely different and that offers a lifestyle that is not commonly found in Orange County.	Yes	No	Yes, but to a lesser degree	Yes, but to a lesser degree

CHAPTER 6
Impacts Found Not to Be Significant

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

As described in the Notice of Preparations/Initial Studies (included as Appendices A1 and A2) prepared for the proposed project, Mineral Resources was found not to have any potentially significant impact. Therefore, all categories except for Mineral Resources have been evaluated in the EIR.

6.1 Assessment in the Initial Studies

The Initial Studies prepared for the proposed project in September 2013 and October 2014 determined that the impacts listed below would be less than significant. Consequently, they have not been further analyzed in the EIR. Please refer to Appendices A1 and A2 of this EIR for a detailed explanation of the basis of these conclusions. Impact categories and questions in **Table 6-1** are summarized directly from the CEQA Environmental Checklist, as contained in the Initial Studies.

TABLE 6.1
IMPACTS FOUND NOT TO BE SIGNIFICANT

Environmental Issues	Initial Study Determination
Agriculture and Forestry Resources. Would the project:	
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No impact
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
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 forest land to non-forest use?	No impact
Air Quality. Would the project:	
e) Create objectionable odors affecting a substantial number of people?	Less than significant impact
Geology and Soils. Would the project:	
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	No impact
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	
iii. Seismic-related ground failure, including liquefaction?	Less than significant impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	No impact
Hazards and Hazardous Materials. Would the project:	
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than significant impact
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
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No impact
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
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
Hydrology and Water Quality. Would the project:	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map?	No impact
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	No impact

TABLE 6.1
IMPACTS FOUND NOT TO BE SIGNIFICANT

Environmental Issues	Initial Study Determination
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	Less than significant impact
j) Inundation by seiche, tsunami, or mudflow?	No impact
Land Use and Planning. Would the project:	
a) Physically divide an established community?	No impact
Mineral Resources. Would the project:	
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
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
Noise. Would the project:	
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	No impact
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	No impact
Population and Housing. Would the project:	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	No impact
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	No impact
Transportation/Traffic. Would the project:	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	No impact
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	No impact
Utilities and Service Systems. Would the project:	
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No impact

6.2 Energy Resources

The *CEQA Guidelines* Appendix F provides guidance for assessing the significance of potential energy impacts, and provides that a project could have a significant effect on the environment if it would:

- Result in a substantial increase in overall or per capita energy consumption;
- Result in wasteful or unnecessary consumption of energy;

- Require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity the construction of which could cause significant environmental effects; or
- Conflict with applicable energy efficiency policies or standards.

6.2-1: Result in a substantial increase in overall or per capita energy consumption.

Development of the proposed project would result in 72 residential units that would be developed pursuant to the California Green Building Standards Code (24 California Code of Regulations [CCR] Part 11), also known as the CALGreen Code, which is to provide for sustainable construction practices, including energy efficiency. The CALGreen Code applies to planning, design, operation, construction, use, and occupancy of residential buildings. In addition, energy consumption would be reduced with implementation of 2016 Title 24 Standards for energy conservation, and installation of EnergyStar–labeled programmable thermostats, lighting and roofing material. The average energy consumption the 72 units is considered incremental as compared to the overall energy use of the southern California region, and it is not anticipated that the 72 units would result in an increase in per capita energy consumption. This impact would be less than significant.

6.2-2: Result in wasteful or unnecessary consumption of energy.

Construction of proposed project would require the use of energy, such as the use of fuels for vehicles and propane to run equipment. Construction activities would result in wasteful, inefficient, or unnecessary use of energy if construction equipment if equipment is left to idle when not in use, if travel routes are not planned to minimize vehicle miles traveled, or if excess lighting is used during construction activities.

Construction of the project would occur in two sequential phases, on Phase 1 (south parcel) first that would occur for 18 months and then on Phase 2 (north parcel) that would occur for 14 months. As a result, the demand for construction-related electricity and fuels to construct the proposed project would be spread out over that time frame. All excavated soils would be balanced onsite; no import or export of soils would be necessary; thus, reducing any unnecessary haul trips. In addition, the project would comply with the California Airborne Toxic Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]) by minimizing equipment idling time either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes. Furthermore, the project would limit construction hours to between the hours of 7:00 a.m. and 8:00 p.m. Monday through Saturday. No construction activity shall be undertaken on Sundays or federal holidays (Section 4-6-7 of the County's Municipal Code and Project Design Feature PDF-21). The limitation in construction hours would reduce the intensity of the use of construction energy and reduce the amount of construction lighting that would be needed.

Energy is also required to make the materials and components used in construction of the project. This includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing. As described in Section 3.16, *Utilities and Service Systems*, all

recyclable wastes generated during construction and operation and maintenance would be recycled at appropriate facilities pursuant to state regulations.

Implementation of the project would require energy consumption; however, none of the proposed energy-consuming activities associated with construction would be a wasteful, inefficient, or unnecessary use of energy. As a result, impacts would be less than significant.

6.2-3: Require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity the construction of which could cause significant environmental effects.

Development of the proposed project would include connecting into the existing electrical infrastructure that is located to the north of the project site, which is available to serve new development. Electricity is currently available to the surrounding residential properties, and the infrastructure for delivering electric power to the proposed project. Existing electrical service capacity would be sufficient to accommodate the proposed project.

In regards to gas services, each parcel within the project would be served by separate propane tanks, which would not require the construction of any infrastructure capacity to provide service. As a result, impacts related to construction of energy infrastructure to serve the proposed project would be less than significant.

6.2-4: Conflict with applicable energy efficiency policies or standards.

As described above, the proposed project would result in 72 residential units that would be developed pursuant to the California Green Building Standards Code (24 California Code of Regulations [CCR] Part 11), also known as the CALGreen Code, which is to provide for sustainable construction practices, including energy efficiency. The CALGreen Code applies to planning, design, operation, construction, use, and occupancy of residential buildings. In addition, energy consumption would be reduced with implementation of current Title 24 Standards for energy conservation, and installation of EnergyStar–labeled programmable thermostats, lighting and roofing material. The project would not conflict with any applicable energy efficiency policies or standards, and impacts would not occur.

CHAPTER 7
Significant Irreversible Changes Due to the Project

Section 15126.2(c) of the CEQA Guidelines states that use of nonrenewable resources during the initial and continued phases of the proposed project may be irreversible if a large commitment of these resources makes its removal, indirect removal, or non-use thereafter unlikely. This section of the EIR evaluates whether the proposed project would result in the irretrievable commitment of resources, or would cause irreversible changes in the environment.

Implementation of the proposed project would be a long-term commitment of the land through development of 72 single-family residential lots and disturbance of 169.5 acres of land that is currently undeveloped.

Both construction and operation of the proposed project would lead to the consumption of limited, slowly renewable, and non-renewable resources, committing such resources to uses that future generations would be unable to reverse. The new development would require the commitment of resources that include: (1) building materials; (2) fuel and operational materials/resources; and (3) the transportation of goods and people to and from the project site.

Construction of the proposed project would consume certain types of lumber and other forest products, the raw materials in steel, metals such as copper and lead, aggregate materials used in concrete and asphalt such as sand and stone, water petrochemical construction materials such as plastic, petroleum based construction materials and other similar slowly renewable or nonrenewable resources. Additionally, fossil fuels for construction vehicles and equipment resources would be required: natural gas and electricity, petroleum based fuels, fossil fuels and water. Use of various nonrenewable natural resources for project construction and operation such as diesel, gasoline, or oil for construction equipment and natural gas or other fossil fuels used to provide power and heating sources to the proposed residential uses. The energy consumed in developing and maintaining the project site may be considered a permanent investment. The proposed project would not use nonrenewable fossil fuels at a greater rate than other typical development projects at this scale. The project would not increase the overall rate of use of any nonrenewable natural resource or result in the substantial depletion of any nonrenewable resource. In addition to the long-term commitment of land uses, the project would result in an increased need for public services and utilities to the project site, which represents a permanent commitment of these resources. Service providers have indicated the ability to provide fire protection, police protection, emergency medical service, and solid waste services (see Sections 3.13, *Public Services* and 3.16, *Utilities and Service Systems* of this EIR).

CHAPTER 8
Growth Inducing Impacts of the Project

Pursuant to Sections 15126.2(c) and 15126.2(d) of the *CEQA Guidelines,* this chapter is provided to examine ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, required by CEQA this section includes an assessment of other projects that would foster activities which could affect the environment, individually or cumulatively. To address these issues, answers to the following questions are examined in terms of the potential to directly or indirectly foster growth:

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

Growth-inducing effects are not to be construed as necessarily beneficial, detrimental or of little significance to the environment (*CEQA Guidelines* Section 15126.2(d)). This issue is presented to provide additional information on ways in which the proposed project could contribute to significant changes in the environment beyond the direct consequences of developing the land use concepts examined in the preceding sections of this EIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project areas?

The proposed project would develop 72 single-family residential lots in an undeveloped area. The proposed "Agricultural Residential" (AR) zoning designation and "Rural Residential" (1A) General Plan Land Use designation would allow a minimum residential lot size of 7,200 square feet. However, the proposed project would cluster these residences north and south of Long Canyon Road, and retain 71 percent of the project area in open space.

Because the project site is largely undeveloped, it does not have the infrastructure required to serve the proposed residential uses. The project includes the extension of infrastructure, which would include access roads into the development area, improvements to existing roadways, and extension of water infrastructure.

Primary access to both project phases would be provided off Long Canyon Road via Ortega Highway; through the construction of a new access road heading north and south from Long Canyon Road (see Figure 2-3 and Figure 2-4 of Chapter 2, *Project Description*). In addition, the project would develop an on-site (internal) roadway system to serve the new residential uses. The new roadways and roadway improvements would only provide access into the project development area for the residential uses to be accessed. The roadways would not provide access to other areas beyond the project site. Because the proposed project includes preservation of large areas of open space, is largely surrounded by open space, and in an area only served by one route via two roadways (Long Canyon Road and Ortega Highway), connections to other existing roadways or the continuation of the proposed roadways would not occur. However, the project does include roadway improvements within the paved right-of-way on Ortega Highway at the Long Canyon Road intersection to provide enhanced access to both phases of the project. The improvements consist of installing a northbound 12-foot wide acceleration lane and a northbound 12-foot wide left turn lane on Ortega Highway; and installing a minimum 22-foot wide southbound deceleration lane on Ortega Highway from Long Canyon Road to 160 feet to the north. These roadway improvements are intended to provide additional safety features at the Ortega Highway and Long Canyon Road intersection, and would not provide an overall increase in capacity to the roadway system because the improvements are limited to areas within 160 feet of the intersection. The capacity of the rest of Ortega Highway would not be increased by the proposed project.

The project would receive water services from Elsinore Valley Municipal Water District (EVMWD). Because the project is currently not located within the EVMWD service area, receiving water services would require annexation of the project area into EVMWD, Western (Western) Municipal Water District, and Metropolitan Water District (MWD). As described in Section 3.16, *Utilities and Service Systems*, to meet the operational water demands, approximately 133.4 acres of the proposed project would require an annexation into the EVMWD service area. EVMWD is wholly within the boundaries of Western, which is wholly within the boundaries of MWD. Because of this arrangement, the area annexed into EVMWD would also be annexed into the boundaries of Western and MWD. The project would require both offsite and onsite improvements that include extension of an existing six-inch main to distribute water to the project area.

The new onsite water distribution facilities would include a 12-inch distribution line that would be constructed throughout the development portions of the project site during each construction phase. There is an existing six-inch water main that extends from Tomlin No. 1 Booster Station located on the northwestern boundary of Lake Elsinore, travels southwest, providing potable water to upgradient communities along Ortega Highway, which would feed the two new water storage reservoirs (one 525,000 gallon and one 615,000 gallon). Both reservoirs would be situated at elevations sufficient to provide water (via gravity feed) to the respective development phases, in order to minimize the use of booster pump stations. New distribution mains from each

reservoir would be installed to provide water to the respective development phases. While the proposed project includes annexation into the EVMWD service area, EVMWD has existing infrastructure and is servicing the area through a six-inch water main that is providing potable water to upgradient communities along Ortega Highway. The project would extend water infrastructure from the existing water main only into the project area to serve the proposed residences and associated landscaping. The extension would not provide service to areas beyond those needing domestic water supply in the proposed project, or provide capacity to serve additional areas. Because the water main is currently installed and available for connections and the project would only provide extensions to serve the proposed uses onsite, the project would not induce population growth outside of the project area through extension of water infrastructure.

To treat wastewater, the proposed project would install wastewater treatment systems located on each lot that would treat effluent and dispose through an underground emitter / soaker lines that would be used to irrigate Fuel Modification Zone 'B' areas. The onsite wastewater treatment systems would be designed to accommodate the demands from each lot and would not be designed, such that multiple lots or areas outside of the proposed project could be served. Thus, the wastewater systems would not provide services beyond those proposed, and would not provide infrastructure that could serve additional areas. Therefore, the project would not induce population growth outside of the project area through extension of wastewater infrastructure.

Would the project remove obstacles to growth through changes in existing regulations pertaining to land development?

The project site is currently designated as Open Space in the Orange County General Plan land use map. This designation allows for limited land uses that do not require a commitment of significant urban infrastructure that are consistent with the open space character of the area. The existing zoning for the project site is General Agriculture (A1), which allows a minimum density of 0.25 to 0.5 dwelling units per acre, or a minimum of four acres per dwelling unit.

A project would directly induce growth if it would remove barriers to population growth such as change to a jurisdictions general plan and zoning code, which allows new residential development to occur. The construction of the proposed project would result in amendments to the General Plan and to the zoning code to allow for the proposed residential development as opposed to the existing undeveloped open space. The project proposes a General Plan land use designation amendment from OS to 1A, which would allow minimum density of 0.25 to 0.5 dwelling units per acre, or two to four residences per acre. The project proposes a far lower density of one residence per acre in Phase 1 (south parcel) and one residence per 1.13 acres in Phase 2 (north parcel), which is well within the density allowed by the proposed 1A land use designation. The project also includes a proposed zone change from A1 to AR. As described above, the project proposes a far lower density than allowed by the proposed zone change.

SCAG policies concerning regional growth-inducement are included as part of Section 3.10, *Land Use*, and Section 3.12, *Population and Housing.* As described in those sections, the growth anticipated by SCAG's projections for regional growth in the project area can accommodate the

increases in population (230 residents) and housing structures (72 single-family units) anticipated at build-out of the project. Therefore, impacts related to growth from changes in existing regulations pertaining to land development would be less than significant.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

The proposed project is expected to incrementally increase demand for fire protection and emergency response, police protection, schools, and library services with development of the proposed 72 single-family units. However, as described in Section 3.13, *Public Services*, of this EIR, the proposed project would not require construction of new or expanded facilities to serve the project site. Based on service ratios, build out projections in the General Plan, and regional growth projections, the proposed project would not create a demand for services beyond what is already contemplated in the General Plan. Therefore, an indirect growth inducing impact as a result of expanded or new public facilities that could support other development in addition to the proposed project would not occur. The proposed project would not have significant growth-inducing consequences as to require the need to expand public services to maintain desired levels of service.

Would this project encourage or facilitate economic or other effects that could result in activities other than the proposed project that could significantly affect the environment?

During each phase of project construction, a number of temporary design, engineering, and construction related jobs would be created. Due to the limited number of homes being developed during each phase (43 in Phase 1 and 29 in Phase 2) and the small size of the additional population (approximately 230 residents), in comparison to the large population and available labor pool in Orange County as a whole, it is highly unlikely that the economic effects of the proposed project would result in other activities that could impact the environment (i.e., new housing or facilities).

Operation of the project would generate a limited number of employment opportunities for security personnel, landscapers, and other service workers to support the 72 single-family units. Such workers are typically drawn from surrounding areas, and the number of employment opportunities generated by the project would be too small to attract a large enough labor force that new housing for those workers would be necessary.

As the new 72 single-family units are occupied, residents of the proposed project would seek shopping, entertainment, and other economic opportunities in the surrounding areas. This would represent an increased demand for such economic goods and services. The new residents of the project could, therefore, encourage the creation of new businesses, and/or the expansion of existing businesses to address these economic needs resulting in an indirect growth inducing impact. It is more likely, however, that given the small number of proposed dwelling units (72), increased long-term economic activity resulting from the proposed project would be

accommodated by existing businesses and business expansion based on overall Orange County growth trends, rather than any discernible expansion related specifically to the proposed project. As shown in Section 3.12, *Population and Housing*, within Table 3.12-5, SCAG estimates the population for Orange County in 2035 to be 3,421,000 persons, an increase of 410,768 persons, based on the 2010 U.S. Census population of 3,010,232. The project would constitute approximately 0.06 percent of the anticipated growth in Orange County. Therefore, the proposed project would result in a limited demand for goods and services that would be satisfied by the existing land uses and anticipated growth within the City of Lake Elsinore and other nearby communities.

Additionally, the proposed project includes development of 24.5 acres of vineyards. Production and/or wine making facilities are not included in the proposed project. However, it is anticipated that the grapes grown on the site would be harvested and sold. The vineyards would be owned, operated/maintained by the HOA for the project, which would also pay for the operation of the vineyards. It is estimated that five employees would be needed on a year-round basis (daily) to oversee the vineyard production, with peaks of up to 25 employees needed during harvest season.

Given the relatively small size of the proposed project in relation to the Orange County population and work force, the economic contribution of this project alone would not be considered significant; still, the small increase in population and economic activity potentially generated by the proposed project could be considered growth inducing.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

The proposed project involves amendments to the County of Orange General Plan and Zoning Ordinance, but those amendments are specific to the allowable land uses on the project site itself. The proposed project does not propose changes to any of Orange County's building safety standards (i.e., building, grading, plumbing, mechanical, electrical, or fire codes). An Area Plan has been prepared to provide for the orderly development of the project site, and large areas of open space would be preserved to buffer the proposed residential uses from adjacent lands. The project would comply with all applicable County plans, policies, and ordinances. In addition, Project Design Features and mitigation measures have been included within this EIR to ensure that the project minimizes environmental impacts. The project would not involve any precedent-setting action that could encourage and facilitate other activities that significantly affect the environment.

CHAPTER 9
Report Preparation, Persons and Organizations Consulted, and References

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9.2 References

Technical Studies/Appendices

Arcadis. 2016. Phase 1 Environmental Site Assessment Report. The Preserve at San Juan Phase 1. 2016.

Arcadis. 2016. Phase 1 Environmental Site Assessment Report. The Preserve at San Juan Phase 2. 2016.

Dudek. 2014. Draft: The Preserve at San Juan Tree Management and Preservation Plan. Prepared for The Preserve at San Juan, LLC. July 2014.

FireSafe Planning Solutions. 2013. Fire Behavior Analysis Report: The Preserve at San Juan. October 23, 2013.

Glenn Lukos Associates, Inc. (GLA). 2014. Letter to Jeff Weber: The Preserve at San Juan LLC. Jurisdictional Delineation of the Preserve at San Juan, an Approximately 340-Acre Assemblage of Properties Located in Unincorporated Orange and Riverside Counties, California. July 1, 2014.

Hunsaker & Associates Irvine, Inc. (Hunsaker). 2014a. Conceptual Water Quality Management Plan. "The Preserve" Vesting Tentative Tract Map No. 17269. July 28, 2014.

Hunsaker. 2014b. Conceptual Water Quality Management Plan. "The Preserve" Vesting Tentative Tract Map No. 17270. July 28, 2014.

Hunsaker. 2014c. Preliminary Hydrology Analysis for The Preserve at San Juan – North. Vesting Tentative Tract Map No. 171269. County of Orange & Riverside. October 2013.

Hunsaker. 2014d. Preliminary Hydrology Analysis for The Preserve at San Juan – Long Canyon. Vesting Tentative Tract Map No. 171269. County of Orange & Riverside. July 2014.

PACE, 2014. "Proposed Onsite Wastewater Treatment System (OWTS) for The Preserve at San Juan Development." From Duong Do, PE to Christina Taylor, Orange County Planning. November 6, 2014.

Pacific Soils Engineering (PSE). 2008. Draft EIR Level Geotechnical Assessment. March 12, 2008.

PCR Services Corporation (PCR). 2014. Draft Biological Resources Assessment. The Preserve: Orange and Riverside Counties, California. August 25, 2008. Updated July 2, 2014.

PCR. 2013. Results of Focused Dry Season Vernal Pool Branchiopod Surveys for the Preserve Project Site, Orange and Riverside Counties, California. October 3, 2013.

San Juan Preserve, LLP (San Juan Preserve). 2014. The Preserve at San Juan Area Plan (PA130026). July 14, 2014.

Terrestrial Solutions, Inc. (Terrestrial). 2014a. Draft EIR-Level Geotechnical Assessment: Tentative Tract Maps 17269 and 17270."The Preserve at San Juan." Counties of Orange and Riverside, California. July 9, 2013. Revised October 30, 2014.

Terrestrial. 2014b. "Response to County Review Comments dated September, 2014, regarding the proposed Onsite Waste Water Treatment System, 'The Preserve at San Juan' County of Orange, California." From Terrestrial Solutions, Inc. to Mr. Jeff Weber, The Preserve at San Juan, LLC. October 23, 2014. Urban Crossroads. 2014. The Preserve at San Juan Traffic Impact Analysis. County of Orange, California. JN: 08426-02-RPT. July 23, 2013. Revised July 2, 2014.

Aesthetics References

California Scenic Highway Mapping System (Caltrans, 2016). Accessed at http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/ on December 26, 2016.

United States Department of Agriculture Forest Service (USFS), 2005. Land Management Plan: Part 2 Cleveland National Forest Strategy. Published in September 2005. Accessed at <http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5270394.pdf> on October 9, 2013.

Agriculture and Forestry Resources References

California Department of Conservation (DOC), Division of Land Resource Protection (DLRP), 2013. Farmland Mapping and Monitoring Program (FMMP). Accessed at <http://www.consrv.ca.gov/dlrp/FMMP/Pages/Index.aspx> on July 14, 2013.

DOC, Division of Land Resource Protection (DLRP), 2010. 2008 – 2010 Orange County Land Use Conversion. Accessed at <http://redirect.conservation.ca.gov/DLRP/fmmp/county_info_results.asp> on October 9, 2013.

Great Outdoor Recreation Pages (GORP). 2010. Cleveland National Forest. Accessed at <http://www.gorp.com/parks-guide/travel-ta-cleveland-national-forest-sidwcmdev_065889.html> on December 11, 2013. Last updated 2013.

United States Department of Agriculture Forest Service (USFS), 2005. Land Management Plan: Part 2 Cleveland National Forest Strategy. Published in September 2005. Accessed at <http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5270394.pdf> on October 9, 2013.

Air Quality References

California Air Resources Board (CARB). 2013a. Area Designation Maps/State and National. Accessed at <www.arb.ca.gov/desig/adm/adm.htm/> on October 8, 2013.

CARB. 2013b. Ambient Air Quality Standards. Last revised: June 4, 2013. Accessed at <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf> on October 8, 2013.

CARB. 2012. Aerometric Data Analysis and Management System. Accessed at <http://www.arb.ca.gov/adam/welcome.html> on September 11, 2013.

CARB. 2009. The California Almanac of Emissions and Air Quality – 2009 Edition. Accessed at <http://www.arb.ca.gov/aqd/almanac/almanac09/almanac09.htm.> in September 2013.

CARB. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Accessed at <http://www.arb.ca.gov/ch/handbook.pdf> in April 2013.

Orange County. General Plan, Chapter VI. Resources Element. 2005. Accessed at <http://ocplanning.net/planning/generalplan2005> on October 8, 2013.

South Coast Air Quality Management District (SCAQMD). 2013. 2012 Air Quality Management Plan. Accessed at <http://www.aqmd.gov/aqmp/2012aqmp/Final-February2013/index.html> in February 2013.

SCAQMD. 2011. SCAQMD Air Quality Significance Thresholds. Accessed at <http://www.aqmd.gov/CEQA/handbook/signthres.pdf> in March 2013.

SCAQMD. 2003. Final Localized Significance Threshold Methodology, Appendix C – Mass Rate LST Look-up Tables. Revised October 21, 2009.

University of California, Davis. Institue of Transportation Studies (UCD ITS). 1997. Transportation Project-Level Carbon Monoxide Protocol, Revised December.

U.S. Environmental Protection Agency (USEPA). 2013. The Greenbook Nonattainment Areas for Criteria Pollutants. Accessed at <http://www.epa.gov/air/oaqps/greenbk/index.html> on October 8, 2013.

U.S. Environmental Protection Agency (USEPA). 2013. Greenbook Definitions. http://www.epa.gov/airquality/greenbook/define.html>on April 1, 2015

Biological Resources References

Glenn Lukos Associates, Inc. (GLA). 2008. Letter to Bill Phillips: The Preserve at San Juan, LLC. Draft as of August 22, 2008.f Subject: Jurisdictional Delineation of The Preserve at San Juan, a 930.6-acre Assemblage of Properties Located in Unincorporated Riverside and Orange Counties, California.

U.S. Fish and Wildlife Service (USFWS). 2014. Quino Checkerspot Butterfly Survey Protocol. Accessed at <http://www.fws.gov/carlsbad/tespecies/Documents/QuinoDocs/Quino_Protocol_2014_FINAL_022114_jrh.pdf> on February 21, 2014.

Cultural/Scientific Resources References

Bean, Lowell John, and Florence C. Shipek, Luiseño. 1978. In California, edited by Robert F. Heizer, pp. 550-563. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Byrd, Brian F., and L. Mark Raab. 2007. Prehistory of the Southern Bight: Models for a New Millennium, in California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp 215-227.

Cameron, Constance. 1999. Determining Tribal Boundaries Through Potsherds-An Archaeological Perspective, in the Pacific Coast Archaeological Society Quarterly 35(2&3):96-126.

Carrico, Richard, Theodore G. Cooley, and Laura J. Barrie. 2003. Final Archaeological Overview for the Cleveland National Forest California, Prepared for the United States Department of Agriculture Forest Service, Prepared by Mooney & Associates.

Cook, Sherburne F. 1978. Historical Demography, In California, edited by Robert F. Heizer, pp. 91-98, Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Fife, Donald L., John A. Minch, and Perry J. Crampton. 1967. Late Jurassic Age of the Santiago Peak Volcanics, California. Bulletin 78(2):299-304. Geological Society of America, Boulder, Colorado.

Gallegos, Dennis. 2002. Southern California in Transition: Late Holocene Occupation of Southern San Diego County, in Catalysts to Complexity: Late Holocene Societies on the California Coast, edited by Jon M. Erlandson and Terry L. Jones, pp 27-40. Perspectives in California Archaeology Vol. 6, Cotsen Institute of Archaeology, University of California, Los Angeles.

Grenda, Donn. 1997. Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore. Statistical Research Inc. (SRI) Technical Series 59, SRI, Tucson, Arizona.

Historic Aerials. 2013. Historic Aerial Photographs for the Years 1938, 1952, 1967 and 1978, Accessed at <http://www.historicaerials.com/> on June 4, 2013.

Horne, Melinda C., and Dennis P. McDougall. 2003. Cultural Resources study for the City of Riverside General Plan 2025 Update Program EIR, Prepared for Cotton Bridges and Associates Urban and Environmental Consultants, on behalf of the City of Riverside Planning Department, Prepared by Applied Earthworks, Inc.

Jennings, Charles W. 1977. Geologic Data Map No. 2. 1:75,000 scale. California Geological Survey, Sacramento.

Johnson, Kim Jarrell. 2013. “Back in the Day: Nudism was the norm at Olympic Fields”, The Press Enterprise, July 15, 2013

Jones, T. L., & Schwitalla, A. 2008. Archaeological Perspectives on the Effects of Medieval Drought in Prehistoric California. Quaternary International 188:41–58.

Kroeber, A. L. 1925. Handbook of the Indians of California. Bureau of American Ethnology Bulletins, No. 78. Smithsonian Institution: Washington, D.C.

Mason, Roger D. 1999. Results of Archaeological Test Programs at CA-RIV-1022, CA-RIV-3331, and CA-RIV-3332H, Cottonwood Hills Project Area, City of Lake Elsinore, Riverside County, CA, Prepared by Chambers Group.

McLeod, Samuel. 2013. Letter Re: Paleontological Resources for the proposed San Juan Project, ESA Project #D120826, west of Lake Elsinore, Orange and Riverside Counties, Project area, May 10, 2013.

Meighan, Clement W. 1954. A Late Complex in Southern California Prehistory, Southwestern Journal of Anthropology 10(2): 215-227.

Moratto, M. J. 1984. California Archaeology. Smithsonian Press: San Diego, CA.

Natural Resources Conservation Service (NRCS). 2013. Web Soil Survey. Electronic resource, Accessed at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> on September 20, 2013.

OPR (Governor's Office of Planning and Research). 2012."Tribal Consultation Guidelines," April 15, 2005, Electronic Document, Accessed at <http://www.opr.ca.gov/SB182004.html> on October 16, 2012.

O'Neil, Stephen and Nancy H. Evans. 1980. Notes on Historical Juaneno Villages and Geographic Features, in the Journal of California and Great Basin Anthropology 2(2):226-232.

O'Neill, Stephen, and Joan C. Brown. 2003. Evaluative Cultural Resources Investigations of CA-ORA-35, Located Within the Los Pinos Conservation Camp in the Cleveland National Forest, Orange County, California. Prepared for the County of Orange Probation Office. Prepared by SWCA, Inc. SWCA Cultural Resources Report No. CRRD 2003-158. On file at South Central Coastal Information Center, Fullerton, California.

Rasmussen, Cecilia. 2007. "It's a Wrap for a Rustic, Remote Nudist Refuge", Los Angeles Times, March 4, 2007.

Rogers, Thomas H. 1965. Geologic Atlas of California Map No. 019. 1:250,000 scale. California Geological Survey, Sacramento.

San Juan Capistrano Historical Society. 2008. Don Juan Foster 1815-1882, internet resource, Accessed at <http://www.fs.usda.gov/detail/cleveland/learning/history-culture/?cid=stelprdb5278297> on May 21, 2013.

Sparkman, Philip Stedman. 1908. The Culture of the Luiseño Indians. University of California Publications in American Archaeology and Ethnology 8(4).

Starr, Kevin. 2007. California: A History, Modern Library.

Sutton, Mark. 2009. People and Language: Defining the Takic Expansion into Southern California. Pacific Coast Archaeological Society Quarterly 41(2/3):32-92, 2006, 2009.

Tice, Steve. 2000. "Ortega Highway, A Link to Early California History", in Los Angeles Times. Accessed at <http://articles.latimes.com/2000/sep/27/news/hw-27277/2> on June 4, 2013.

True, Delbert L. 1958. An Early Complex in San Diego County, California, American Antiquity, 23(3):225-263.

True, Delbert L., and Georgie Waugh. 1982. Proposed Settlements Shifts during San Luis Rey Times: Northern San Diego County, California. Journal of California and Great Basin Anthropology 4(1):34-54.

Underbrink, Susan and Stephen O'Neil. 2008. Cultural Resources Study for the Preserve at San Juan, Orange, and Riverside Counties, California, prepared for ESA, prepared by SWCA, March 2008.

United States Department of Agriculture (USDA) Forest Service. n.d. The Cleveland National Forest is Created! Accessed at <http://www.fs.usda.gov/detail/cleveland/learning/history-culture/?cid=stelprdb5278297> on May 21, 2013.

United States Geological Survey (USGS)

_____, Lake Elsinore 30-minute quadrangle, 1901.

_____, Alberhill 7.5-minute quadrangle, 1954.

_____, Alberhill 7.5-minute quadrangle, 1997.

U.S. Department of the Interior. 1995. National Register Bulletin: How to Apply the National Register Criteria for Evaluation. National Park Service, Washington, D.C.

Warren, C.N. 1967. The San Dieguito Complex: A Review and Hypothesis. American Antiquity, 32 (2): 168-185.

Geology and Soils References

Aerostream. 2013. Septic Tank Problems: Learn How a Septic Tank Fails. Accessed at <http://www.aero-stream.com/septic-tank-problems.html> on September 24, 2013.

California Building Code (CBC). 2013.

California Department of Conservation (DOC). 2013a. Seismic Hazard Zones. Accessed at <http://conservation.ca.gov//cgs/shzp/Pages/shmprealdis.aspx> on September 19, 2013.

DOC. 2013b. Landslides. Accessed at <http://conservation.ca.gov/cgs/geologic_hazards/landslides/Pages/Index.aspx> on September 19, 2013.

DOC. 2011. Natural Hazards Disclosure: Alquist Priolo Fault Zones. Accessed at <http://www.conservation.ca.gov/cgs/rghm/ap/Pages/disclose.aspx> on October 15, 2013.

DOC. 2006. Seismic Hazard Mapping: Alberhill Quadrangle. Accessed at <http://gmw.consrv.ca.gov/shmp/MapProcessor.asp?MapNavAction=IMapRefresh&Action=IMap&Location=SoCal&FClass=Quad&FID=Alberhill&Liq=true&Land=true&Bore=fal

se&Road=true&City=false&x1=450660.1130551306&y1=3734865.8659580755&x2=468069.7469928694&y2=3720329.6667479244> on October 15, 2013.

California Department of Health Services (DHS). 1999. Drinking Water Source Assessment and Protection (DWSAP) Program. Division of Drinking Water and Environmental Management. Accessed at <http://www.cdph.ca.gov/certlic/drinkingwater/Documents/DWSAPGuidance/DWSAP_document.pdf> on October 15, 2013.

California Geological Survey (CGS). 2002a. California Geomorphic Provinces. Accessed at <http://conservation.ca.gov//cgs/information/publications/cgs_notes/note_36/Documents/note_36.pdf> on September 19, 2013.

CGS. 2002b. Note 32: How Earthquakes And Their Effects Are Measured. Accessed at <http://www.conservation.ca.gov/CGS/information/publications/cgs_notes/note_32/note_32.pdf> on September 26, 2013.

Jennings, Charles W. and Bryant, William A. 2010. 2010 Fault Activity Map of California. Accessed at <http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html> on September 26, 2013.

Lin II, Rong-Gong. 2010. "San Andreas fault capable of magnitude 8.1 earthquake over 340-mileswath of California, researchers say [Updated]." L.A. Times: L.A. Now. October 8, 2010. Accessed at <http://latimesblogs.latimes.com/lanow/2010/10/san-andreas-capable-of-80-earthquake-over-340-mile-swath-of-california-researchers-say.html> on September 30, 2013.

Natural Resources Conservation Service (NRCS). 2013. Web Soil Survey: Soil Map of Area of Interest Clipping. Accessed at <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx> on September 20, 2013.

Orange County. 2013. Orange County Regulations for Wastewater Treatment and Disposal Systems. Effective August 28, 2013. Accessed at http://www.co.orange.nc.us/envhlth/documents/OrangeCountyWastewaterSystemRules.pdf on October 7, 2014.

Orange County. 2010. On-Site Sewage Guidelines. On-Site Sewage Absorption System Guidelines. Accessed at <http://ocplanning.net/civicax/filebank/blobdload.aspx?BlobID=8881?> on December 27, 2013.

Orange County. 2010. Orange County and Orange County Flood Control District Local Implementation Plan. December 16, 2010. Accessed at <http://ocwatersheds.com/civicax/filebank/blobdload.aspx?BlobID=10048> on October 2, 2013.

Ready, Mila. 2013. Top reasons for septic system failure and how to prevent them. Accessed at <http://www.uwyo.edu/barnbackyard/_files/documents/magazine/2008/summer/septic-summer-2008.pdf> on September 26, 2013.

Schultz, Sandra S. and Wallace, Robert E. 2013. The San Andreas Fault. USGS. Accessed at <http://pubs.usgs.gov/gip/earthq3/safaultgip.html> on September 30, 2013.

Southern California Earthquake Center (SCEC). 2013. Southern California Is Earthquake Country. Accessed at <http://www.earthquakecountry.org/roots/socal.html> on September 19, 2013.

Southern California Earthquake Data Center (SCEDC). 2013. Significant Earthquakes and Faults. Accessed at <http://www.data.scec.org/significant/index.html> on September 19, 2013.

State Water Resources Control Board (SWRCB). 2012. Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy): Summary of the Adopted Policy. Accessed at <http://www.waterboards.ca.gov/water_issues/programs/owts/summary.shtml> on September 24, 2013.

SWRCB. 2009. 5.0 – Hydromodification – Stream Channel Modification. Last updated 1/23/09. Accessed at <http://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/5.0_hydromod.shtml> on October 15, 2013.

United States Department of Agriculture (USDA). 2001a. Blasingame Soil Series. Accessed at <https://soilseries.sc.egov.usda.gov/OSD_Docs/B/BLASINGAME.html> on September 20, 2013.

USDA. 2001b. Capistrano Soil Series. Accessed at <https://soilseries.sc.egov.usda.gov/OSD_Docs/C/CAPISTRANO.html> on September 20, 2013.

USDA.2001c. Friant Soil Series. Accessed at <https://soilseries.sc.egov.usda.gov/OSD_Docs/F/FRIANT.html> on September 20, 2013.

USDA.2012. Cieneba Soil Series. Accessed at <https://soilseries.sc.egov.usda.gov/OSD_Docs/C/CIENEBA.html> on September 20, 2013.

United States Environmental Protection Agency (USEPA). 2006. National Pollutant Discharge Elimination System: Preventing Septic System Failure. Accessed at <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=25> on September 24, 2013.

United States Geological Survey (USGS). 2013. EHP Quaternary Faults. Accessed at <http://geohazards.usgs.gov/qfaults/map.php> on September 19, 2013.

USGS. 2012. Earthquake Hazards Program: Earthquake glossary-lateral spread or flow. Accessed at <http://earthquake.usgs.gov/learn/glossary/?term=lateral%20spread%20or%20flow> on September 20, 2013.

USGS. 2009. Earthquake Probability Mapping. Accessed at <https://geohazards.usgs.gov/eqprob/2009/output/9331_large.png> on September 20, 2013.

Watkins, Annie and Hughes, Scott. 2013. Environmental Geology – GEOL 406/506. Module 4: Landslides, Slope Failure and Other Mass Wasting Processes. Accessed at <http://geology.isu.edu/wapi/envgeo/EG4_mass_wasting/EG_module_4.htm> on September 26, 2013.

Greenhouse Gas Emissions References

Ahrens, D.C. 2003. Meteorology Today: An Introduction to Weather, Climate, and the Environment. Brooks Cole, Inc. Pacific Grove, CA.

California Air Resources Board (CARB). 2013a. California Greenhouse Gas Inventory for 2000-2011 — by Category as Defined in the 2008 Scoping Plan. Accessed at <http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-11_2013-08-01.pdf> in August 2013.

CARB. 2013b. Update to AB 32 Scoping Plan. Accessed at <http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>.on October 14, 2013.

CARB. 2011. Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document. Accessed at <http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf>. on August 19, 2013.

CARB. 2008. Climate Change Scoping Plan. Accessed at <http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf> in December 2013.

CARB. 2007. Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended For Board Consideration. Accessed at <http://www.arb.ca.gov/cc/ccea/meetings/ea_final_report.pdf> in October 2013.

California Climate Action Registry (CCAR). 2009. California Climate Action Registry General Reporting Protocol, Version 3.1. Los Angeles, CA. Accessed at <http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf> in January 201X.

California Department of Houseing and Community Development, CalGreen. 2016. <http://www.hcd.ca.gov/calgreen.html> Accessed: December 16, 2016

California Energy Commission (CEC). 2006a. Inventory of California Greenhouse Gas Emissions and Sinks:1990 to 2004. (Final Staff Report). Publication CEC-600-2006-013-SF. Accessed at <http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF.> in December 2013.

CEC. 2006b. Refining Estimates of Water-Related Energy Use in California. Publication Number: CEC-500-2006-118. Accessed at <http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF> in December 2013.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007, Working Group III Report, Mitigation of Climate Change. Geneva, Switzerland.

Governor's Office of Planning and Research (OPR). 2008. Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review. June 19.

Pacific Institute. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. November.

Seinfeld, John H., and Spyros N. Pandis. 1998. Atmospheric Chemistry and Physics: From Air Pollution to Climate Change.

South Coast Air Quality Management District (SCAQMD). 2013. Appendix A Calculation Details for CalEEMod. July.

SCAQMD. 2010. Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #15. Accessed at <http://www.aqmd.gov/ceqa/handbook/GHG/2010/sept28mtg/ghgmtg15-web.pdf> in September 2010.

SCAQMD. 2008. Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold. October 2008.

State Water Resources Control Board (SWRCB). 2012. Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy): Summary of the Adopted Policy. Accessed at <http://www.waterboards.ca.gov/water_issues/programs/owts/summary.shtml> on September 24, 2013.

United States Environmental Protection Agency (USEPA). 2011. Mandatory Reporting of Greenhouse Gases (40 CFR part 98)- Fact Sheet. Accessed at <http://www.epa.gov/ghgreporting/documents/pdf/2009/FactSheet.pdf> on October 8, 2013.

USEPA. 2010. Final Rule: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule- Fact Sheet. Accessed at <http://www.epa.gov/NSR/documents/20100413fs.pdf> on October 8, 2013.

Hazards and Hazardous Materials References

AirNav.com, 2016. https://www.airnav.com/airport/CA42. Accessed December 7, 2016.

CalFire Very High Fire Hazard Severity Zones Map. (Calfire, 2011). <https://media.ocgov.com/civicax/filebank/blobdload.aspx?BlobID=8756>. Accessed December 30, 2016.

EVMWD, 2014. Development Services. Accessed at <http://www.evmwd.com/depts/engineering/development_services.asp> on July 28, 2014.

Orange County. 2014a. Pesticide Regulation. Accessed at <http://ocagcomm.com/pesticide/disposal> on July 28, 2014.

Orange County. 2014b. Disposal of Pesticide Materials: Household Hazardous Waste Program. Accessed at <http://ocagcomm.com/pesticide/disposal> on July 28 2014.

Orange County Fire Authority (OCFA). 2011a. Hazard Mitigation Plan, adopted March 2011.

Orange County Fire Authority (OCFA). 2011b. Orange County Fire Authority Technical Design for New Construction Fuel Modification Plans and Maintenance. January 2011.

Orange County Sheriff's Department, 2014. Emergency Operations Center, Accessed at <http://ocsd.org/divisions/fieldops/emb/mgmt/eoc> on July 31, 2014.

PNW. 2009. Science Findings. Bioenergy from Trees: Using Cost-Effective Thinning to Reduce Forest Fire Hazards. Issue 117. October 2009. Accessed at <http://www.fs.fed.us/pnw/sciencef/scifi117.pdf> on July 29, 2014.

Hydrology and Water Quality References

Aerostream. 2013. Septic Tank Problems: Learn How a Septic Tank Fails. Accessed at <http://www.aero-stream.com/septic-tank-problems.html> on September 24, 2013.

Department of Water Resources (DWR). 2006. California's Groundwater Bulletin 118. Hydrologic Region South Coast. Elsinore Groundwater Basin. Last updated 1/20/06. Accessed at <http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/8-4.pdf> on October 14, 2013.

DWR. 2004. California's Groundwater Bulletin 118. Hydrologic Region South Coast. San Juan Basin. Last updated 2/27/04. Accessed at <http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/9-1.pdf> on October 14, 2013.

Environmental Protection Agency (EPA). 2006. National Pollutant Discharge Elimination System: Preventing Septic System Failure. Accessed at <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=25> on September 24, 2013.

Elsinore Valley Municipal Water District (EVMWD). 2011. Elsinore Valley Municipal Water District Urban Water Management Plan. Accessed at <http://www.water.ca.gov/urbanwatermanagement/2010uwmps/Elsinore%20Valley%20Municipal%20Water%20District/EVMWD%20UWMP%202010_Final.pdf> on September 27, 2013.

Orange County. General Plan. 2005. Accessed at <http://ocplanning.net/planning/generalplan2005> on October 11, 2013.

Orange County. 2013. Orange County Regulations for Wastewater Treatment and Disposal Systems. Effective August 28, 2013. Accessed at http://www.co.orange.nc.us/envhlth/documents/OrangeCountyWastewaterSystemRules.pdf on October 7, 2014.

Orange County. 2012. Hydromodification Management Plan for South Orange County. October 25, 2012 Version. Accessed at <https://cms.ocgov.com/gov/pw/watersheds/documents/damp/lip.asp> on October 2, 2013.

Orange County. 2016. Orange County and Orange County Flood Control District Local Implementation Plan. 2016 Accessed at <https://cms.ocgov.com/gov/pw/watersheds/documents/damp/lip.asp> on December 7, 2016.

Orange County. 2005. General Plan: Resources Element

San Diego Regional Water Quality Control Board (RWQCB). 2012a. San Diego Region-The Basin Plan. Chapter 2-Beneficial Uses. Accessed at <http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/docs/update082812/Chpt_2_2012.pdf> on October 14, 2013.

Robichaud, Peter R.; Wagenbrenner, Joseph W.; Brown, Robert E.; Spigel, Kevin M. 2009. Three Years of Hillslope Sediment Yields Following the Valley Complex Fires, Western Montana. September 2009. Accessed at http://www.fs.fed.us/rm/pubs/rmrs_rp077.pdf on July 28, 2014.

RWQCB. 2012b. San Diego Region-The Basin Plan. Accessed at <http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/> on September 27, 2013.

San Juan Basin Authority (SJBA). 2011. Groundwater Programs. Accessed at http://www.sjbauthority.com/programs.html#1 on July 29, 2014.

State Water Resources Control Board (SWRCB). 2012. Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy): Summary of the Adopted Policy. Accessed at <http://www.waterboards.ca.gov/water_issues/programs/owts/summary.shtml>
<http://www.waterboards.ca.gov/water_issues/programs/owts/board_adopted_policy.shtml> on December 7, 2016.

SWRCB. 2010. Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) – Statewide 2010. Accessed at <http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml> on October 2, 2013.

SWRCB. 2009. 5.0 – Hydromodification – Stream Channel Modification. Last updated 1/23/09. Accessed at <http://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/5.0_hydromod.shtml> on October 15, 2013.

Land Use and Planning References

County of Orange Zoning Code. 2005. Accessed at <http://ocplanning.net/civicax/filebank/blobdload.aspx?BlobID=9061> on October 8, 2013.

Orange County. 2015. General Plan, Chapter III. Land Use Element. Accessed at <http://ocplanning.net/civicax/filebank/blobdload.aspx?blobid=55705> on December 12, 2016.

SCAG, Regional Transportation Plan 2012-2035/Sustainable Communities Strategy. Accessed at <http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx> on September 25, 2013.

SCAG. 2012. Regional Housing Needs Assessment for Fifth Cycle, 2012. Accessed at <http://rtpscs.scag.ca.gov/Documents/rhna/5thCyclePFinalRHNAplan.pdf> on September 25, 2013.

Noise References

Anderson, G.S.; Miller, L.N.; and Shadley, Ft. R., Bolt, Beranek and Newman, lnc. 1973. Fundamentals and Abatement of Highway Traffic Noise. Prepared for U.S, Department of Transportation, FHWA, PB-222-703/I. Washington, D.C., June 1973

California Department of Transportation (Caltrans). 2004. Transportation- and Construction-Induced Vibration Guidance Manual. June.

Caltrans. 2009. Technical Noise Supplement. Accessed at <http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf> on December 13, 2016.

Caltrans. 1998. Technical Noise Supplement (TeNS), A Technical Supplement to the Traffic Noise Analysis Protocol. October.

Carrier. 2016. Carrier Enterprise Product Data for the 38HDR060 split system condenser. Accessed at: <http://www.carrierenterprise.com/carrier-performance-5-ton-up-to-13-seer-single-zone-cooling-only-condenser-38hdr060-3> on December 13, 2016.

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. May.

Office of Planning and Research. 2003. State of California Genera Plan Guidelines. October.

Orange County. General Plan, Chapter VIII. Noise Element. 2005. Accessed at <http://ocplanning.net/planning/generalplan2005> on October 8, 2013.

United States Environmental Protection Agency (USEPA). 1971. Noise from Construction Equipment and Operations, Building Equipment, and home appliances. December 31.

United States Department of Transportation (DOT). 2016. Noise and Vibration Mitigation Guidelines: http://www.hsr.ca.gov/docs/programs/merced-fresno-eir/final_EIR_MerFres_TA_Noise_3-4A.pdf

Population and Housing References

California Department of Finance, 2013. E-5 Population and Housing Estimates for Cities, Counties and the State, January 2011-2013, with 2010 Benchmark. Accessed at

<http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php> on September 25, 2013.

California Department of Finance, 2000. E-8 Population and Housing Estimates 1990 - 2000,4/1/1990 to 4/1/2000. Accessed at <http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php> on September 25, 2013.

County of Orange Housing Element, adopted March 2011.

SCAG, Profile of the Unincorporated area of Orange County Area City Projections, 2013. Accessed at <http://www.scag.ca.gov/Documents/UnIncAreaOrangeCounty.pdf> on September 25, 2013.

SCAG, 2012. Regional Transportation Plan Integrated Growth Forecast.

SCAG, 2012a. Regional Housing Needs Assessment for Fifth Cycle, 2012. Accessed at <http://rtpscs.scag.ca.gov/Documents/rhna/5thCyclePFinalRHNAplan.pdf> on September 25, 2013.

United States Census, 2010. Profile of General Population and Housing Characteristics: 2010. Accessed at <http://factfinder2.census.gov/bkmk/table/1.0/en/DEC/10_DP/DPDP1/0500000US06059> on September 20, 2013.

United States Census, 2000. Profile of General Population and Housing Characteristics: 2000.Accessed at <http://factfinder2.census.gov/bkmk/table/ 1.0/en/DEC/00_SF1/DP1/0500000US06059> on September 20, 2013.

Public Services References

Education Data Partnership, California Department of Education: Accessed at <http://www.ed-data.k12.ca.us/App_Resx/EdDataClassic/fsTwoPanel.aspx?#!bottom=/_layouts/EdDataClassic/profile.asp?tab=0&level=06&ReportNumber=16&County=30&fyr=1213&District=73635> on November 25, 2013.

Orange County Fire Authority (OCFA). 2013a. Fire Stations and Services. Accessed at <http://www.ocfa.org/Menu/AboutOCFA/Services.aspx> on October 1, 2013.

Orange County Fire Authority (OCFA). 2013b. Written correspondence from Michele Hernandez, Management Analyst, Strategic Services. October 7, 201.3

Orange County Sheriff's Department (OCSD). 2013. South Operations. Accessed at <http://ocsd.org/divisions/fieldops/south/> on October 1, 2013.

Orange County Sheriff's Department (OCSD). 2013a. Written correspondence from Kirk Wilkerson, Director/Chief Information Officer. November 1, 2013.

OCSD. 2013b. Contact OCSD. Accessed at <http://ocsd.org/contact/contact> on August 1, 2013.

Saddleback Valley Unified School District (SVUSD). 2013. Fingertip Facts.

Orange County. 2005. General Plan, Chapter V. Public Services Element. Accessed at <http://ocplanning.net/planning/generalplan2005> on October 8, 2013.

Heritage Fields Project 2012 GPA/ZC Draft Second Supplemental EIR, City of Irvine, July 2012. Accessed at < http://www.ci.irvine.ca.us/civica/filebank/blobdload.asp?BlobID=20553> on December 6, 2013.

Persons Consulted

Brown, Sally. 2013. Mission Community Hospital Executive Assistant to President and CEO, email communication, October 14, 2013.

Garcia, Kristine. 2013. Systems Tech, Orange County Sheriff Department South Operations Division, email communication, November 1, 2013.

Gasset, Jennifer. 2013. Rancho Santa Margarita Library Branch Manager, email communication. October 17, 2013.

Hernandez, Michele, 2013. Management Analyst/Strategic Service of OCFA, telephone and email communication, October 7, 2013.

Ortenburger, Maria. 2013. Developer Fees Department of Saddleback Valley Unified School District at (949) 580-3256, telephone communication. October 14, 2013.

Tanton, Stephanie. 2013. Mission Viejo Library Director, telephone communication. October 14, 2013.

Recreation References

Orange County. General Plan, 2005. Accessed at <http://ocplanning.net/planning/generalplan2005> on October 3, 2013.

Orange County, 2013 Parks. OC Parks. Accessed at <http://www.ocparks.com/> on October 3, 2013.

U.S. Department of Agriculture (USDA). 2014. Land Management Plan Strategy - Suitable Land Uses (Elsinore). Accessed at <http://www.fs.usda.gov/detail/cleveland/landmanagement/planning/?cid=fsbdev7_016597 > on July 24, 2014.

USDA. 2013. Cleveland National Forest – Recreation. Accessed at <http://www.fs.usda.gov/detailfull/cleveland/recreation/?cid=stelprdb5288896> on October 03, 2013. \

USDA. 2005. National Forest Strategy - Land Management Plan, Part 2 Cleveland National Forest Strategy. Accessed at <http://www.fs.usda.gov/detail/cleveland/landmanagement/planning/?cid=fsbdev7_016587 > on October 3, 2013.

Transportation/Traffic References

Transportation Research Board, Highway Capacity Manual, 2000.

City of Lake Elsinore Capital Improvement Plan Budget FY 2016-2017 to FY 2020-21. Accessed: http://www.lake-elsinore.org/home/showdocument?id=15817

Utilities and Service Systems References

Aerostream. 2013. Septic Tank Problems: Learn How a Septic Tank Fails. Accessed at <http://www.aero-stream.com/septic-tank-problems.html> on September 24, 2013.

CalRecycle. 2016. Facility/Site Summary Details: El Sobrante Landfill (33-AA-0217). Accessed at <http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0217/Detail/> on December 9, 2016.

CalRecycle. 2016. Facility/Site Summary Details: Frank R. Bowerman Landfill (30-AB-0360). Accessed at < http://www.calrecycle.ca.gov/SWFacilities/Directory/30-AB-0360/Detail//> on December 9, 2016.

CalRecycle. 2016. Facility/Site Summary Details: Prima Deshecha Landfill (30-AB-0019). Accessed at < http://www.calrecycle.ca.gov/SWFacilities/Directory/30-AB-0019/Detail//> on December 9, 2016.

CalRecycle. 2016. Estimated Residential Disposal in California. Accessed at <http://www.calrecycle.ca.gov/LGCentral/Rates/Disposal/Resident.htm> on December 9, 2016.

Elsinore Valley Municipal Water District (EVMWD). 2016. Elsinore Valley Municipal Water District Urban Water Management Plan. Accessed at <http://www.evmwd.com/civicax/filebank/blobdload.aspx?blobid=31890 > on December 7, 2016.

EVMWD. (20016a). 2016 Water System Master Plan. Accessed at <http://www.evmwd.com/civicax/filebank/blobdload.aspx?BlobID=32038> on December 7, 2016.

EVMWD. 2000b. Development Services. Accessed at <http://www.evmwd.com/depts/engineering/development_services.asp> on October 16, 2013.

International Association of Plumbing and Mechanical Officials (IAPMO). 2014. California Plumbing Code: Chapter 16A. Accessed at <http://www.iapmo.org/2010%20California%20Plumbing%20Code/Chapter%2016A.pdf> on July 23, 2014.

Orange County. 2014. On-Site Sewage Absorption System Guidelines. Accessed at <http://ocplanning.net/civicax/filebank/blobdload.aspx?BlobID=8881> on July 24, 2014.

Orange County. 2012. Hydromodification Management Plan for South Orange County. October 25, 2012 Version. Accessed at <https://cms.ocgov.com/gov/pw/watersheds/documents/damp/lip.asp> on October 2, 2013.

Orange County. 20106 Orange County and Orange County Flood Control District Local Implementation Plan. 2016. Accessed at <https://cms.ocgov.com/gov/pw/watersheds/documents/damp/lip.asp> on December 7, 2016.

PACE. 2008. E-mail Conversation with Duong Do, PE, Senior Project Manager; October 7, 2013.

State Water Resources Control Board (SWRCB). 2012a. OWTS Policy: Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy): June 19, 2012. Accessed at <http://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf> on July 23, 2014.

SWRCB. 2012b. Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy): Summary of the Adopted Policy. Accessed at <http://www.waterboards.ca.gov/water_issues/programs/owts/summary.shtml> on September 24, 2013.